XR-C410/C412

SERVICE MANUAL

AEP Model
UK Model
XR-C410
German Model
XR-C412

Photo : XR-C410

Mode Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MG-50A-39

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.08 % (WRMS)
Frequency response	30 – 18,000 Hz
Signal-to- noise ratio	

Cassette type	Dolby B NR	Dolby NR off
TYPE II, IV	67 dB	61 dB
TYPE I	64 dB	58 dB

Tuner section

FM

Tuning range	87.5 – 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 70 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

MW/LW (SW, for the XR-C412)

Tuning range	MW: 531 – 1,602 kHz LW: 153 – 281 kHz SW: 5,950 – 6,205 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	MW: 30 µV LW: 50 µV SW: 50 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	22 W × 4 (at 4 ohms)

General

Output lead	Power antenna relay control lead Power amplifier control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 186 × 57 × 170 mm (w/h/d) not incl. projecting parts and controls
Mounting dimension	Approx. 182 × 53 × 153 mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.3 kg
Supplied accessories	Power connecting cord (1) Mounting hardware (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

FM/MW/LW CASSETTE CAR STEREO
XR-C410

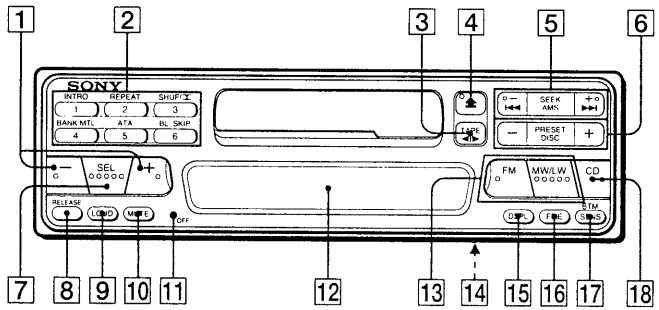
FM/MW/SW CASSETTE CAR STEREO
XR-C412

SONY®

TABLE OF CONTENTS

Section	*Title*	*Page*
1.	**GENERAL**	
	Button Location	3
	Setting the Clock	3
	Listening to Tape Playback	4
	Convenient Functions	4
	Tuning in a Station	4
	Memorizing Stations	5
	Traffic Announcement Reception (XR-C412)	5
	Other Functions	6
	CD Changer Operation	6
	Custom File Function	7
	Connections	9
2.	**DISASSEMBLY**	
2-1.	Sub Panel	11
2-2.	Amplifier Board	11
2-3.	Mechanism Deck Block	12
2-4.	Main Board	12
2-5.	Front Back Panel	12
3.	**MECHANICAL ADJUSTMENTS**	13
4.	**ELECTRICAL ADJUSTMENTS**	
	Deck Section	13
	Tuner Section	14
5.	**DIAGRAMS**	
5-1.	IC Pin Description	18
5-2.	Semiconductor Lead Layouts	20
5-3.	Block Diagram	21
5-4.	Circuit Boards Location	23
5-5.	Printed Wiring Boards—Main Section—	24
5-6.	Schematic Diagram—Main Section—	27
5-7.	Printed Wiring Board—Panel Section—	32
5-8.	Schematic Diagram—Panel Section—	34
6.	**EXPLODED VIEWS**	
6-1.	Chassis Section	40
6-2.	Front Panel Section	41
6-3.	Mechanism Deck Section	42
7.	**ELECTRICAL PARTS LIST**	43

Button Locations



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Refer to the pages in ● for details.

1 (volume/bass/treble/balance/fader control) button ❺❿⓭

2 During radio reception:
Preset number buttons ❽

During tape/CD playback:

INTRO button ❼⓫⓬

REPEAT button ❼⓫⓬

SHUF/DD (Dolby B NR) button ❻❿⓬

BANK/METAL button ❻⓮

ATA (Automatic Tuner Activation) button ❼⓮

BL.SKIP button ❼❿

3 TAPE/◄I► (playback/transport direction change) button ❻

4 ⏏ (eject) button ❻❿

5 SEEK/AMS button ❻❼❾⓫⓮

6 PRESET/DISC button ❻❼❽❾⓭

7 SEL (control mode select) button ❺❾❿⓬⓭⓮

8 RELEASE (front panel release) button ❹⓯

9 LOUD (loudness) button ❿

10 MUTE button ❿

11 OFF button ❹❺❻❿

12 Display window

13 XR-C410:

(radio on/band select) button ❻❼❽

XR-C412:

(radio on/band select) button ❻❼❽

(traffic announcement) button ❾

14 POWER SELECT switch (located on the bottom of the unit)
See "POWER SELECT Switch" in the installation/Connections manual.

15 DSPL (display mode change/time set) button ❺⓭

16 FILE (custom file mode select • set) button ⓭⓮

17 SENS/BTM (Sensitivity adjust/Best Tuning Memory Function) button ❼❽

18 CD (disc play/CD changer select) button ❻⓫⓭

The illustration of the front panel in this manual is of the XR-C410.

3

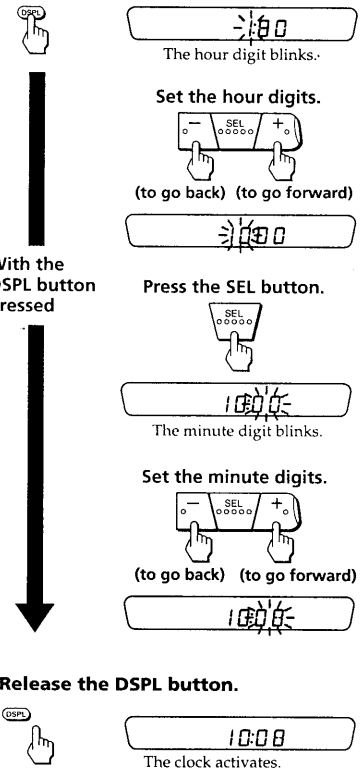
Setting the Clock

The clock has a 24-hour digital indication.

For example, setting it to 10:08

1 Display the time.
(Press the OFF or the DSPL button during the unit operation.)

2 Press the DSPL button for more than two seconds.



3 Release the DSPL button.

The clock activates.

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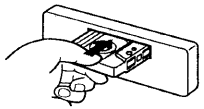
SECTION 1
GENERAL

This section is extracted from instruction manual.

Listening to Tape Playback

After inserting the cassette, playback will start automatically.



If a cassette is already inserted, press the [TAPE] button to start playback.
If you press during playback, the tape transport direction will change.

Indication of Tape Transport Direction

The side facing up is being played.

The side facing down is being played.

To stop playback,
eject the cassette by pressing the [⏏] button or press the OFF button.
Playback stops also when you select another source (radio, CD) by pressing the [FM], [AM/LW] ([TUNER]) or [CD] button.

Ejecting the Cassette

Press the [⏏] button.

To Fast-wind the Tape

Rewind — Fast-forward

To start playback during rewinding or fast-forwarding, press the [TAPE] button.

Playing a Tape Recorded in the Dolby B NR System

Press the [SHUF/3] button when you want to listen to a tape recorded in the Dolby B NR system. → "DD" appears in the display.
To cancel, press again.

Playing a CrO_2 or Metal Tape

Press the [BANK/MTL 4] button when you want to listen to a CrO_2 (TYPE II) or metal (TYPE IV) tape. → "MTL" will appear on the display.
To cancel, press again.

Convenient Functions

Locating the Beginnings of the Tracks

— AMS (Automatic Music Sensor) Function

During playback, press either side of the SEEK/AMS button the number of times you wish to skip the tracks.

To locate the previous tracks — To locate the succeeding tracks

Up to nine tracks can be skipped.

If the blanks between the tracks are shorter than four seconds, or if there are noises, the AMS function will not work. Also, the unit may read long sections of low volume music or quiet sections on a track as blanks between tracks.

Searching the Desired Track

— Intro Scan Function

Press the [INTRO 1] button during playback. → "INTRO" appears on the display.
The first 10 seconds of all the tracks are played. When you find the desired track, press the button once more. The unit returns to the normal playback mode.

Playing Tracks Repeatedly

— Repeat Play Function

Press the [REPEAT 2] button during playback. → "REP" appears on the display.
When the currently played track is over, it will be played again from the beginning.
To cancel this mode, press the button again.

Radio Reception during Fast-forwarding or Rewinding of a Tape

— ATA (Automatic Tuner Activation) Function

Press the [ATA 5] button during playback. → "ATA" appears on the display.
When fast-forwarding or rewinding with the [PRESET DISC] button, the tuner will turn on automatically.

Skipping Blanks Automatically during Tape Playback

— Blank Skip Function

Press the [BL SKIP 6] button during playback. → "BL.SKIP" appears on the display.
Blanks longer than eight seconds will be automatically skipped during tape playback.

Tuning in a Station

Searching for the Stations Automatically

— Automatic Tuning

1 Select the desired band.
XR-C410:

[FM] FM1 → FM2 → FM3 → FM1

[MW/LW] MW ↔ LW

XR-C412:

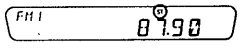
[TUNER] FM1 → FM2 → FM3 → MW → SW → FM1

2 Press either side of the SEEK/AMS button to search for the station (automatic tuning).

For lower frequencies — For higher frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

When an FM stereo program with a sufficient signal strength is tuned in,



the "ST" indication will appear.

To avoid the automatic tuning from stopping on stations too frequently (local seek mode), press the [BTM SENS] button momentarily to get the "LCL" indication.
Only the stations with relatively strong signals can be tuned in. The local seek mode functions only when the automatic tuning is in operation.

If FM Stereo Reception is Poor

— Monaural Mode

Press the [BTM SENS] button momentarily. → "MONO" appears on the display.
The sound will improve, but it will become monaural.

Tuning in by Adjusting the Frequency

— Manual Tuning

1 Select the desired band.
XR-C410: [FM] [MW/LW]

XR-C412: [TUNER]

2 Press and hold either side of the PRESET/DISC button.
Release the button when the desired station is received.

For lower frequencies

For higher frequencies

PREVENTING ACCIDENTS!
When tuning in during driving, use the automatic tuning and the memory preset tuning instead of the manual tuning.

Memorizing Stations

Memorizing Stations Automatically

— BTM (Best Tuning Memory) Function

This function selects from the currently received band the stations with the strongest signals and memorizes them in order of their frequency.

1 Select the desired band.
XR-C410: [FM] [MW/LW]

XR-C412: [TUNER]

2 Press the BTM (SENS) button for more than two seconds.
- When there is no preset number indicated on the display window, stations will be stored on all preset number buttons on the currently selected band.
- When there is a preset number indicated on the display window, the unit will store stations on all preset number buttons from the one currently displayed.

For example, when you select FM2 and preset number 3 is displayed,
the operation will start from preset number 3 on FM2, and will stop at preset number 6 on FM3.

Memorizing Only the Desired Stations

1 Select the desired band.
XR-C410: [FM] [MW/LW]

XR-C412: [TUNER]

2 Tune in the station which you wish to store on the preset number button.

3 Keep the desired preset number button (INTRO 1 to IN. SKIP 6) pressed for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears on the display window.

Up to 6 stations on each band (FM1, FM2, FM3, MW and LW(SW)) can be stored on the preset number buttons in order of your choice. Therefore, 18 stations can be memorized on FM.
If you try to store another station on the same preset number button, the previously stored station will be erased.

Receiving the Memorized Stations

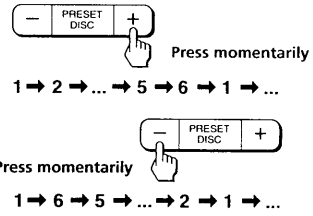
1 Select the desired band.
XR-C410: [FM] [MW/LW]

XR-C412: [TUNER]

2 Press momentarily the preset number button on which the desired station is stored.

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized again. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

Press either side of the PRESET/DISC button momentarily to receive in order the stations stored in the memory (Preset Search Function).



Traffic Announcement Reception (XR-C412)

Receiving Traffic Announcements

Press the SDK (TRAFFIC) button. → "SDK" appears on the display.
The unit will search for a traffic information station.
When the station is tuned in, the "SK" indication too will appear.

When a traffic announcement starts → the "SDK" indication will flash.
The reception of the traffic announcement will override the current radio broadcast or tape or CD playback. When the announcement is over, the interrupted radio reception or tape or CD playback will be resumed.

To stop receiving the traffic announcements, press the SDK (TRAFFIC) button again.

Notes
- *While the station is broadcasting a traffic announcement (with the "SDK" indication flashing), the SEEK/AMS, PRESET/DISC, SENS and preset number buttons will not be operational.*
- *While the unit is receiving a traffic information station (with the "SDK" flashing), the BTM function (page 8) cannot be activated.*
- *During MW and SW reception, the SDK function does not work; if you press the SDK button, the unit will automatically switch to FM1.*

Searching for another Traffic Information Station

Press the SEEK/AMS button while the "SDK" indication is lit but not flashing.

Hearing a Traffic Announcement at the Preset Volume Level

1 Adjust the volume to the desired level with the − or + button.

2 Press the 3 button while pressing the SEL button. → A beep sound will be heard and the volume level will be memorized.
When a traffic announcement starts, it is heard at the preset volume level.

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6

Other Functions

Adjusting the Sound Characteristics

1 Select the item you want to adjust by pressing the SEL button repeatedly.
VOL (volume) → BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)

2 Adjust the selected item by pressing either the − or + button.

Adjust within three seconds after selecting. (After three seconds the button will again serve as volume control button.)

Enjoying Bass and Treble even at Low Volume

— Loudness Function

Press the LOUD button. → "LOUD" will appear on the display.
Bass and treble will be reinforced. To cancel, press again.

Muting the Sound Quickly

— Mute Function

Press the MUTE button. → The "MUTE" indication flashes.
The sound is muted at once. To restore the previous volume level, press again.

This function will be also canceled when:
— the + or OFF button is pressed.
— ejecting a cassette by pressing the ⏏ button during tape playback.

Muting the Beep Tone

Press the 6 SKIP button while pressing the SEL button.
To reobtain the beep tone, press these buttons again.

CD Changer Operation

(With the optional CD changer(s) connected)

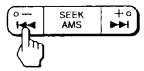
Playing a CD

Press the CD button.
CD playback starts.

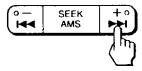
Locating the Beginnings of the Tracks

— AMS (Automatic Music Sensor) Function

During playback, press either side of the SEEK/AMS button the number of times you wish to skip the tracks.



To locate the previous tracks

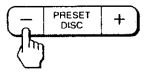


To locate the succeeding tracks

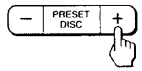
Locating the Desired Part of a Track

— Manual Search

During playback, press and hold either side of the PRESET/DISC button. Release the button when you have found the desired part.



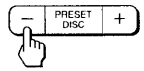
To reverse



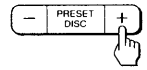
To forward

Changing CDs

During playback, press either side of the PRESET/DISC button momentarily.



To return to the previous CD



To advance to the next CD

Selecting CD Changers

(with several CD changers connected)

Press the CD button during CD playback.
Each time you press, another CD changer will be selected.

Searching for the Desired Track — Intro Scan Function

Press the INTRO 1 button during playback. → "INTRO" appears on the display.
The first 10 seconds of all the tracks on the currently selected disc are played in order. After the first disc is over, the next CD is played. When two or more CD changers are connected, after the last disc is played, CD play moves on to the next CD changer.

When you find the desired track, press again . The unit returns to the normal CD playback mode.

Playing Repeatedly

— Repeat Play Functions

Playing the currently selected track repeatedly
— Track repeat
Press the REPEAT 2 button during CD playback to get the "REP 1" indication.

Playing the currently selected disc repeatedly
— Disc repeat
Press the REPEAT 2 button during CD playback to get the "REP 2" indication.

continue to next page →

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Traffic Announcement Reception/Other Functions/CD Changer Operation

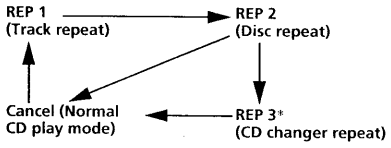
When the last track on the currently selected disc is over, CD playback is repeated from the beginning of that disc.

Playing the discs in the currently selected CD changer repeatedly — CD changer repeat (when two or more CD changers are connected)

Press the REPEAT (2) button during CD playback to get the "REP 3" indication.

When the last disc in the currently selected CD changer has been played, CD playback will be repeated from the first CD in this changer.

The function of the REPEAT (2) button changes cyclically as follows:



** CD changer repeat (REP 3) mode functions only when two or more CD changers are connected to the unit. When only one CD changer is connected, the "REP 3" indication will not be displayed. In case you press the REPEAT (2) button again while the "REP 2" indication is being displayed, the repeat mode will be canceled.*

Playing Tracks Randomly

— Shuffle Play Functions

Playing the tracks on the currently selected disc randomly — Disc shuffle play

Press the SHUF/(II) (3) button during CD playback to get the "SHUF 1" indication.

All tracks on the currently selected CD are played in random order. After each track has been played once, shuffle play will continue with the next CD.

Playing each track on each CD in the currently selected CD changer randomly — CD changer shuffle play

Press the SHUF/(II) (3) button during CD playback to get the "SHUF 2" indication.

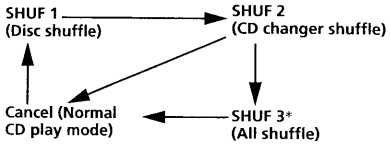
All tracks on each CD in the currently selected CD changer are played in random order.

Playing each track on each CD in all connected CD changers randomly — All shuffle play (when two or more CD changers are connected)

Press the SHUF/(II) (3) button during CD playback to get the "SHUF 3" indication.

All tracks on each CD in each CD changer connected are played in random order.

The function of the SHUF/(II) (3) button changes cyclically as follows:



** The all-shuffle (SHUF 3) mode functions only when two or more changers are connected to the unit. When only one changer is connected, "SHUF 3" indication will not be displayed. In case you press the SHUF/(II) (3) button again while "SHUF 2" is displayed, the shuffle play will be canceled.*

If you press the INTRO (1) button during shuffle play, the first 10 seconds of all tracks will be played randomly.

Custom File Function

When (a) CD changer(s) with custom file feature* is (are) connected, you can display the customized titles (Disc Memo Function) and play selected tracks (Bank Function) on the discs.
These settings are stored in the memory of the CD changer. Therefore, even if you take a custom-filed disc out of the CD changer, you can still use the same custom file function the next time you play that disc in the same CD changer. (You can register the customized titles and the PLAY/SKIP settings on up to 110 discs** per CD changer.)

** If your system has several CD changers connected, you can play that disc in another CD changer and can still use the same custom file function, provided that the CD changers are inter-connected with the Bus (Unilink) cables.*

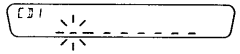
*** If you try to register more than 110 discs, the unit will display the "FULL" indication and will not accept the command for custom -filing. In this case, you will have to erase other discs from the CD changer memory before you enter the new ones.*

Putting Your Personalized Titles onto the Discs

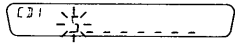
— Disc Memo Function

1 Play the disc that you wish to title (page 11).

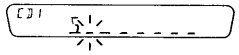
2 Press the TITLE button for more than two seconds.
Enter the name edit mode.



3 Press either the − or + button to select the desired characters.



4 Press the SEL button after locating the desired character.



The flashing part moves to the next space on the right. Repeat steps 3 and 4 to enter the entire title. Up to eight characters can be used per disc.

Notes

- *If you press the SEL button when the eighth character (farthest right character) is flashing, the flashing part goes back to the first character (farthest left character).*
- *If you wish to put a blank space after a character, select "_" (under-bar).*

5 Ⓐ To return to the normal CD play mode,

— press the FILE button for more than two seconds.

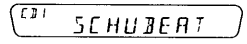
— press the CD button to select the next CD changer (when two or more CD changers are connected).

Ⓑ To continue to the put titles onto the discs,

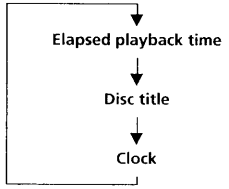
press either side of the − PRESET DISC + button momentarily to another disc.

Displaying the Registered Titles — Disc Memo Function

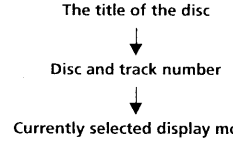
Press the DSPL button during CD playback.



Each time you press the DSPL button during CD playback, the display on the display window changes as follows:



Title display modes
While loading the discs, whatever display mode the unit is in, the indication on the display window automatically changes as follows:



Changing a Registered Title

— Disc Memo Function

Play the disc whose title you wish to change, and perform steps 2 to 5 to enter the name edit mode.

Erasing a Registered Title

— Disc Memo Function

1 Select the CD changer and play any disc.

2 Press the FILE button for more than two seconds.
Enter the name edit mode.

continue to next page →

3 Press the ATA 5 button while pressing the SEL button.

4 Press either the ▷ or ◁ button to select the title that you wish to erase.

5 Press the SEL button for more than two seconds.
Now, the title and the PLAY/SKIP settings of the bank function are erased.
Repeat step 4 and step 5 if necessary.

6 Press the FILE button for more than two seconds.
The unit returns to the normal CD playback mode.

The alternative method to erase a title
You can erase a title by selecting eight "_"s (under-bar) as described in step 3 of "Putting Your Personalized Titles onto the Discs" (page 13).

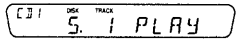
E

Setting the Play and Skip Modes on the Discs
— Bank Function

1 Play the disc to which you wish to set these modes.

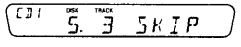
2 Press the FILE button for more than two seconds
Enter name edit mode.
See page 13 for details about registering a title. If the title has already been registered, go to step 3.

3 Press the +10 button momentarily.
Enter the PLAY/SKIP edit mode.



Note
When the title is not registered, you cannot enter the PLAY/SKIP edit mode even if you press the FILE button.

4 Press either side of the ⏮ SLEEP AMS ⏭ button to select the track number you wish to skip and press the SEL button.



The indication changes from "PLAY" to "SKIP". If you wish to return to "PLAY", press the SEL button again.
Repeat the operation in this step to set either the "PLAY" or "SKIP" mode on all the tracks.

Notes
You can set the "SKIP" mode only onto up to 24 tracks. If a disc has more than 24 tracks, you will not be able to set the "SKIP" mode on the tracks after the 24th track.

5 Press the FILE button for more than two seconds.
The unit returns to the normal CD playback mode.

Playing Selected Tracks on the Discs — Bank Function

Press the BANK.MTL 4 button. → The "BANK" indication appears on the display window.

The unit starts playing the tracks with "PLAY" settings which have been set by the PLAY/SKIP edit mode.

To cancel, press it again.

Playing the tracks with "SKIP" settings
Press the BANK.MTL 4 button while pressing the SEL button.

The unit starts playing the tracks with "SKIP" settings which have been set by the PLAY/SKIP edit mode.

To go back to the normal playing mode, press the BANK.MTL 4 button again while pressing the SEL button.

Note
Even when you play a disc with the PLAY/SKIP settings, if the "BANK" indication has not appeared on the display window, the disc will not be played according to the settings.

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the yellow and red power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- Run all ground wires to a common ground point.

When the Unit is Used in a Car with No Accessory Position on the Ignition Key — POWER SELECT Switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear if the unit is used in a car with no accessory position on the ignition key. To avoid this battery wear when using the unit in such a car, set the POWER SELECT switch located on the bottom of the unit to the OFF position, then press the reset button. The illumination is reset to stay off while the unit is not being played.

Note

The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the OFF position.

Reset Button

When the installation and connections are over, be sure to press the reset button with a ball-point pen etc.

Connexions

Précautions

- Cet appareil est conçu pour fonctionner sur courant continu de 12 V avec masse négative.
- Avant d'effectuer les connexions, débrancher la borne de terre de la batterie du véhicule pour éviter tout court-circuit.
- Brancher les fils d'entrée d'alimentation jaune et rouge seulement après avoir terminé tous les autres branchements.
- Veiller à ne pas raccorder le fil rouge d'entrée d'alimentation à la borne positive de 12 V qui est alimentée quand la clé de contact est sur la position accessoire.
- Rassembler tous les fils de terre en un point de masse commun.

Si l'appareil est utilisé dans une voiture dont la clé de contact n'a pas de position accessoire — Interrupteur POWER SELECT

L'éclairage du panneau avant est réglé en usine de manière à s'allumer même quand l'appareil ne fonctionne pas. Cependant, ce réglage risque d'épuiser la batterie si l'appareil est utilisé dans une voiture dont la clé de contact ne possède pas de position accessoire. Pour éviter d'épuiser la batterie, régler l'interrupteur POWER sur le socle de l'appareil sur OFF, puis appuyer sur la touche de réinitialisation. L'éclairage est réglé pour rester éteint quand l'appareil n'est pas utilisé.

Remarque

Quand l'interrupteur POWER SELECT est réglé sur OFF, l'avertisseur du panneau avant ne fonctionne pas.

Anschluß

Vorsicht

- Dieses Gerät ist ausschließlich für eine negativ geerdete 12-V-Autobatterie bestimmt.
- Trennen Sie vor dem Anschließen des Geräts die Erdungsklemme der Batterie ab, um einen Kurzschluß zu vermeiden.
- Schließen Sie das gelbe und rote Stromversorgungskabel erst an, wenn alle anderen Kabel bereits angeschlossen sind.
- Leiten Sie das rote Stromversorgungskabel an einen positiven 12-V-Kontakt, an dem Spannung anliegt, wenn sich das Zündschloß in der Position I bzw. ACC (Position vor der Zündposition) befindet.
- Schließen Sie alle Erdungskabel an einen gemeinsamen Massepunkt an.

Wenn das Zündschloß Ihres Wagens keine Position I bzw. ACC besitzt — POWER SELECT-Schalter

Das Gerät ist werkseitig so voreingestellt, daß das Bedienungspult auch dann beleuchtet ist, wenn das Gerät nicht betrieben wird. Besitzt das Zündschloß Ihres Fahrzeugs keine Position I bzw. ACC, so ist die Beleuchtung ständig eingeschaltet und entzieht der Batterie Strom. Stellen Sie in einem solchen Fall den POWER SELECT-Schalter an der Unterseite des Geräts auf OFF, und drücken Sie dann die Rücksetztaste. Bei ausgeschaltetem Gerät ist das Bedienungspult dann nicht mehr beleuchtet.

Hinweis

Der Warnton für die Frontplatte ertönt nicht, wenn der POWER SELECT-Schalter auf OFF gestellt ist.

Rücksetztaste

Nach der Installation und dem Anschluß muß die Rücksetztaste mit einem Kugelschreiber o.ä. gedrückt werden.

Collegamenti

Attenzione

- Questo apparecchio è stato progettato per l'uso solo a 12 V CC con massa negativa.
- Prima di eseguire i collegamenti, scollegare il terminale di massa della batteria dell'auto per evitare cortocircuiti.
- Collegare i cavi di collegamento alimentazione rosso e giallo solo dopo aver collegato tutti gli altri cavi.
- Assicurarsi di collegare il cavo rosso di collegamento alimentazione al terminale di alimentazione 12 V positivo che è sotto tensione quando la chiavetta di accensione è in posizione accessoria.
- Portare tutti i cavi di massa a un punto di massa comune.

Quando si usa l'apparecchio in un'auto priva di posizione accessoria per la chiavetta di accensione — Interruttore POWER SELECT

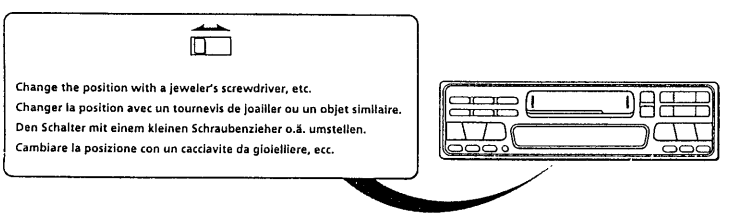
L'illuminazione del pannello anteriore è stata predisposta in fabbrica per l'attivazione anche quando non si usa l'apparecchio. Tuttavia questa regolazione può causare scaricamento della batteria dell'auto se si usa l'apparecchio in un'auto priva di posizione accessoria per la chiavetta di accensione. Per evitare lo scaricamento della batteria quando si usa l'apparecchio in questo tipo di auto, regolare su OFF l'interruttore POWER SELECT situato sul fondo e quindi premere il pulsante di azzeramento. L'illuminazione viene così regolata per lo spegnimento quando non si usa l'apparecchio.

Nota

La suoneria di avvertimento per il pannello anteriore non si attiva quando l'interruttore POWER SELECT è regolato sulla posizione OFF.

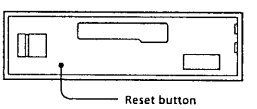
Pulsante di azzeramento

Dopo avere terminato l'installazione e i collegamenti, assicurarsi di premere il pulsante di azzeramento con la punta di una penna a sfera ecc.


Change the position with a jeweler's screwdriver, etc.
Changer la position avec un tournevis de joaillier ou un objet similaire.
Den Schalter mit einem kleinen Schraubenzieher o.ä. umstellen.
Cambiare la posizione con un cacciavite da gioielliere, ecc.

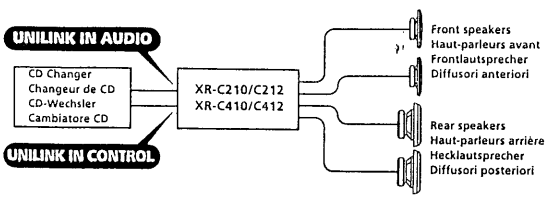
Touche de réinitialisation

Quand l'installation et les connexions sont terminées, appuyer sur la touche de réinitialisation avec un stylo bille ou un objet pointu.

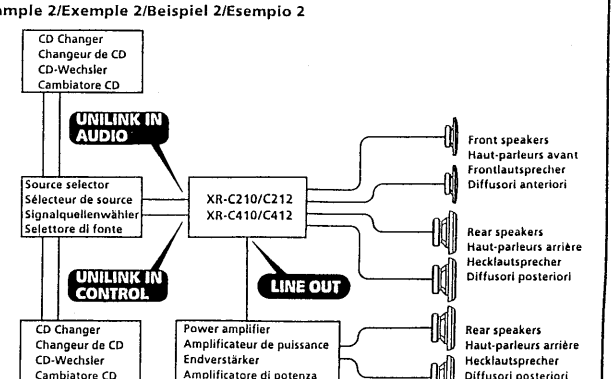


Connection Diagram — Schémas de connexion — Anschlußdiagramm — Schema di collegamento

Example 1/Exemple 1/Beispiel 1/Esempio 1

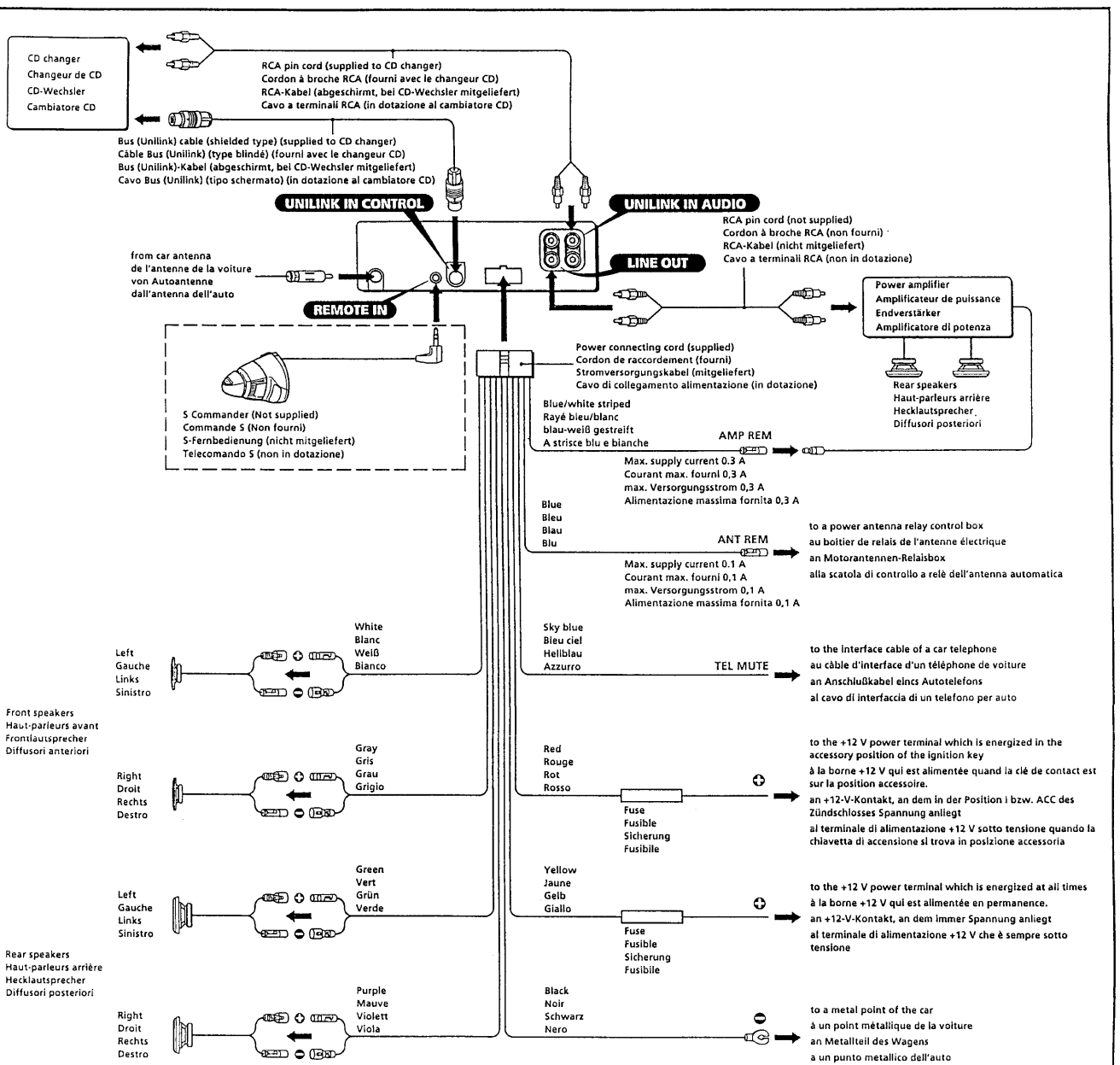


Example 2/Exemple 2/Beispiel 2/Esempio 2



If you connect two or more CD changers, the source selector XA-U20 or XA-U40 is required.
Vous devrez utiliser le sélecteur de source XA-U20 or XA-U40, si vous raccordez au moins deux changeurs.
Bei Anschluß von zwei oder mehr CD-Wechslern wird der Signalquellenwähler XA-U20 oder XA-U40 benötigt.
Se si collegano due o più cambiatori CD, è necessario il selettore di fonte XA-U20 o XA-U40.

Connections of Example — Connexions de l'exemple — Anschlußbeispiel — Collegamenti per l'esempio



Notes on the control leads
- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the ATA (Automatic Tuner Activation) function.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Remarques sur les fils de contrôle
- *Le fil de contrôle de l'antenne électrique (bleu) fournit du courant continu de +12 V quand le tuner est mis sous tension ou quand la fonction ATA (Automatic Tuner Activation) est activée.*
- *Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil.*

Connexion pour la conservation de la mémoire
Lorsque le fil d'entrée d'alimentation jaune est connecté, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

Remarques sur la connexion des haut-parleurs
- *Avant de raccorder les haut-parleurs, mettre l'appareil hors tension.*
- *Utiliser des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager.*
- *Ne pas raccorder les bornes du système de haut-parleurs au châssis de la voiture et ne pas connecter les bornes du haut-parleur droit à celles du haut-parleur gauche.*
- *Ne pas tenter de raccorder les haut-parleurs en parallèle.*
- *Ne pas raccorder des haut-parleurs actifs (avec amplificateurs intégrés) aux bornes de haut-parleur de l'appareil sous peine de les endommager. Veiller à raccorder des haut-parleurs passifs à ces bornes.*

Hinweise zu den Steuerleitungen
- *Die Motorantennen-Steuerleitung (blau) gibt beim Einschalten des Tuners und beim Aktivieren der ATA-Funktion (Automatic Tuner Activation) +12 V Gleichspannung ab.*
- *Eine Motorantenne ohne Relaisbox kann nicht angeschlossen werden.*

Zur Stromversorgung des Speichers
Wenn das gelbe Stromversorgungskabel angeschlossen ist, wird der Speicher stets (auch bei ausgeschaltetem Zündschloß) mit Strom versorgt.

Hinweise zum Lautsprecheranschluß
- *Schalten Sie das Gerät aus, bevor Sie die Lautsprecher anschließen.*
- *Verwenden Sie Lautsprecher mit einer Impedanz zwischen 4 und 8 Ohm und ausreichender Belastbarkeit. Ansonsten können die Lautsprecher beschädigt werden.*
- *Verbinden Sie die Lautsprecheranschlüsse nicht mit dem Wagenchassis, und verbinden Sie auch nicht die Anschlüsse des rechten mit denen des linken Lautsprechers.*
- *Versuchen Sie nicht, Lautsprecher parallel anzuschließen.*
- *An die Lautsprecheranschlüsse dieser s Geräts dürfen nur Passivlautsprecher angeschlossen werden. Schließen Sie keine Aktivlautsprecher (Lautsprecher mit eingebauten Verstärkern) an, da diese sonst beschädigt werden können.*

Nota sui cavi di collegamento
- *Il cavo di controllo dell'antenna automatica (blu) fornisce +12 V CC quando si accende il sintonizzatore o quando si attiva la funzione ATA (Automatic Tuner Activation).*
- *Non è possibile usare un'antenna automatica senza la scatola a relè con questo apparecchio.*

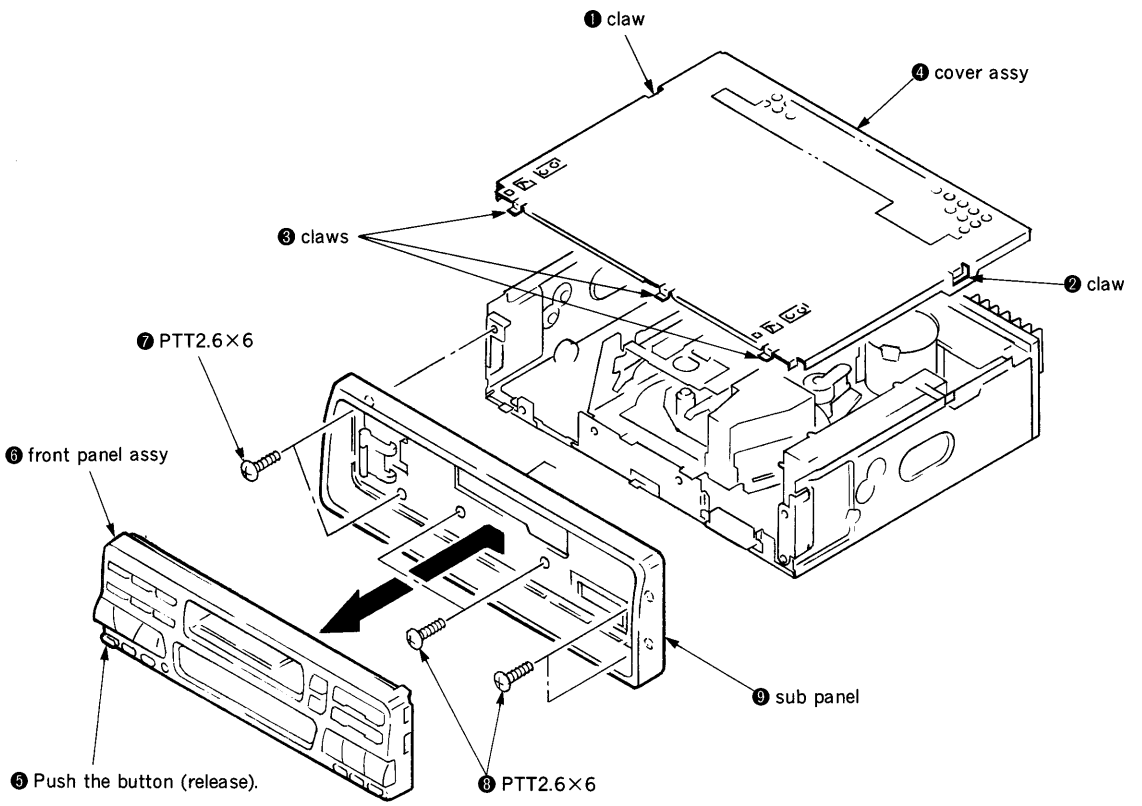
Collegamento per la conservazione della memoria
Quando il cavo di ingresso alimentazione giallo è collegato, viene sempre fornita alimentazione al circuito di memoria anche quando la chiavetta di accensione è spenta.

Note sul collegamento dei diffusori
- *Prima di collegare i diffusori spegnere l'apparecchio.*
- *Usare diffusori di impedenza compresa tra 4 e 8 ohm e con capacità di potenza adeguate, altrimenti i diffusori possono essere danneggiati.*
- *Non collegare i terminali del sistema diffusori al telaio dell'auto e non collegare i terminali del diffusore destro a quelli del diffusore sinistro.*
- *Non collegare i diffusori in parallelo.*
- *Non collegare alcun diffusore attivo (con amplificatore incorporato) ai terminali diffusori dell'apparecchio perché questo può danneggiare i diffusori attivi. Assicurarsi di collegare diffusori passivi a questi terminali.*

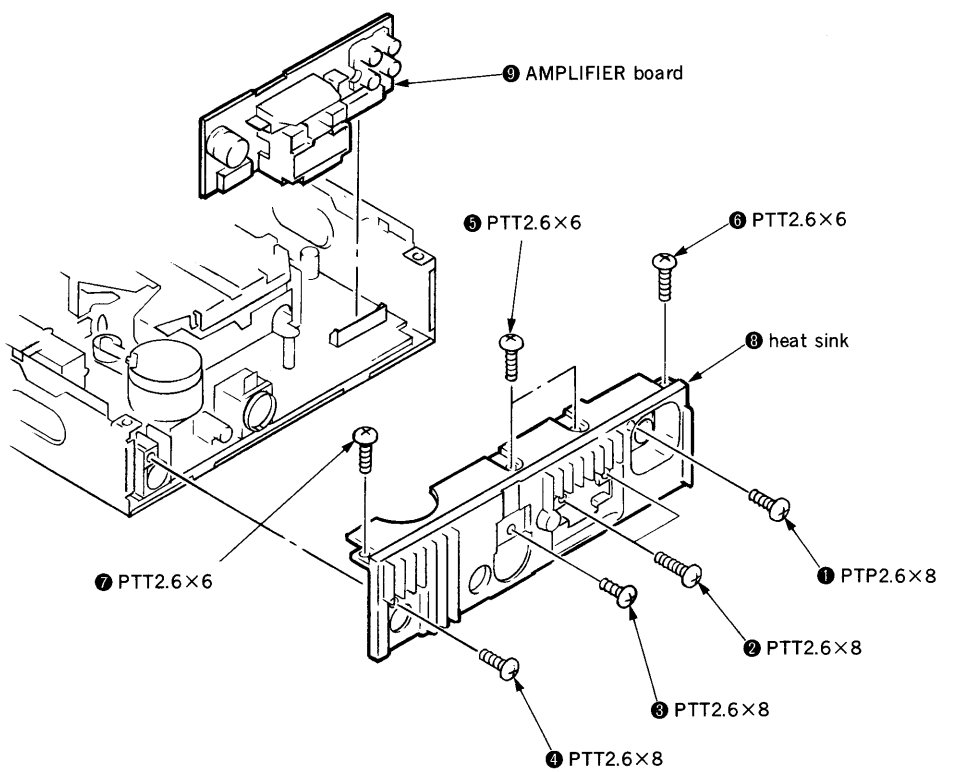
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

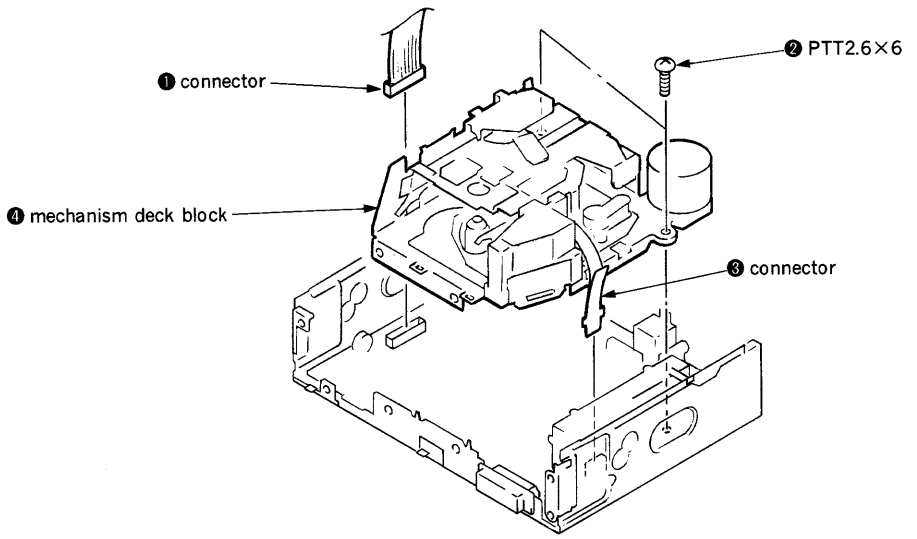
2-1. SUB PANEL



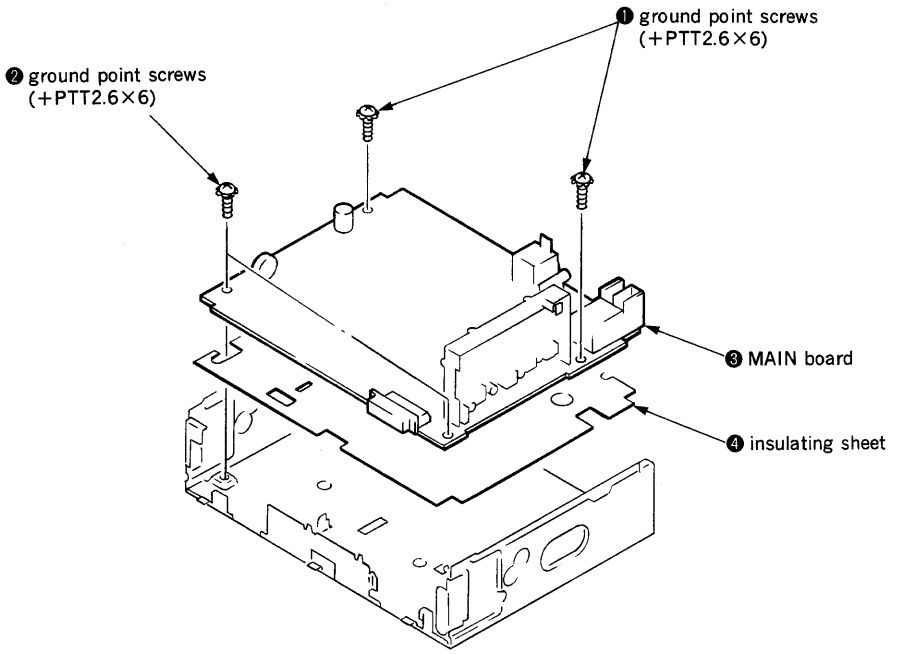
2-2. AMPLIFIER BOARD



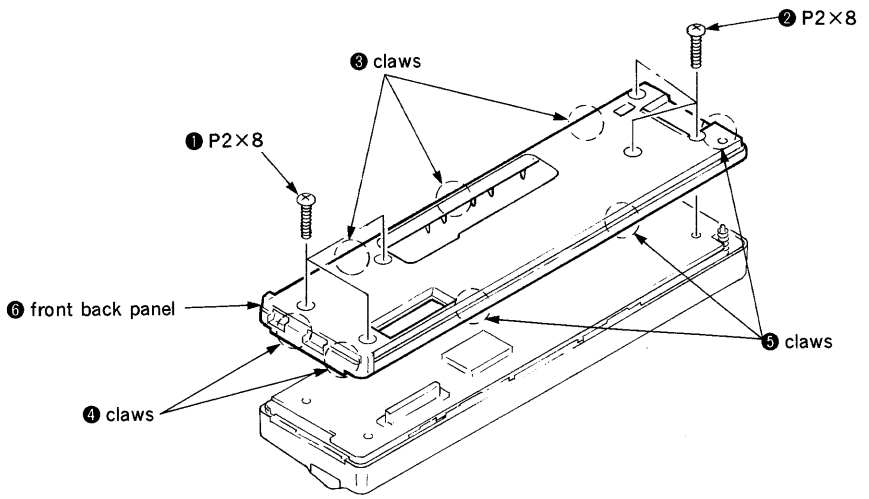
2-3. MECHANISM DECK BLOCK



2-4. MAIN BOARD



2-5. FRONT BACK PANEL



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment :
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	30−65g•cm (0.42−0.90 oz•inch)
FWD Back Tension		0.5−4.5g•cm (0.01−0.06 oz•inch)
REV	CQ-102RC	30−65g•cm (0.42−0.90 oz•inch)
REV Back Tension		0.5−4.5g•cm (0.01−0.06 oz•inch)
FF, REW	CQ-201B	60−200g•cm (0.83−2.78 oz•inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 90g (more than 3.18 oz)
REV	CQ-403R	

SECTION 4
ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and AM Auto Scan/Stop Level adjustments can be performed easier than it in ordinaly procedure.

〈Set the Test Mode〉

1. Set the "OFF" mode.
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for two seconds.
5. Then the display indicates five patterns and stops, the test mode is set.

〈Rerease the Test mode〉

1. Push the "OFF" button.

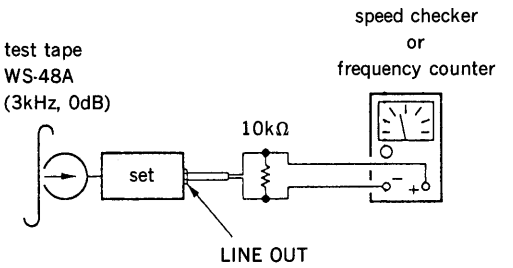
See the adjustment location from on page 17 for the adjustment.

DECK SECTION　**0dB=0.775V**

Tape Speed Adjustment

Procedure :

1. Put the set into the FWD PB mode.



Specification : Constant speed

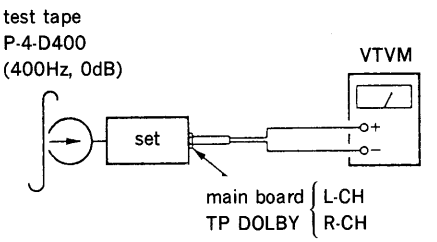
Speed checker	Frequency counter
−1.5 to +2.5%	2,955 to 3,075Hz

Adjustment Location : See page 17.

DOLBY Level Adjustment

Setting :

Preset [3] (DOLBY) button : OFF
SEL (BAS) button : Center
SEL (TRE) button : Center
SEL (BAL) button : Center
SEL (FAD) button : Center
SEL (VOL) button : Maximum



Procedure :

1. Put the set into the FWD PB mode.
2. Adjust RV310 (L-CH) and RV410 (R-CH) so that VTVM reading is −6±0.5 dB (0.37 to 0.41V).

Adjustment Location : See page 17.

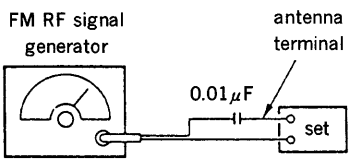
TUNER SECTION **0dB=1μV**

Cautions during repair
When the front end is defective, replace it by a new one because its internal block is difficult to repair.

FM Auto Scan/Stop Level Adjustment

Setting :

FM button (C410) : FM
TUNER button (C412) : FM

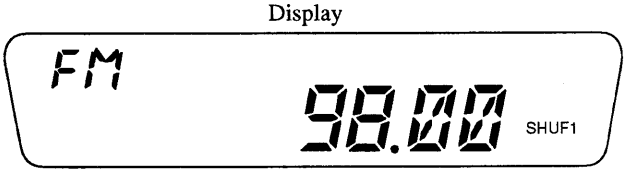


Carrier frequency: 98.00MHz
Output level : 22dB (12.6μV)
Mode : mono
Modulation : 1kHz, 75kHz deviation

Procedure :

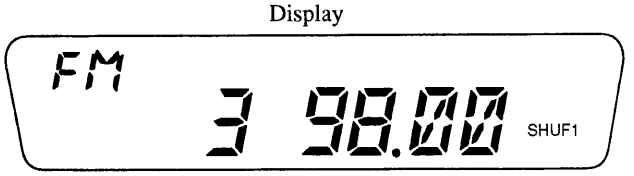
1. Set to the test mode. (See page 13.)
2. Push the [FM] button (C410) or [TUNER] button (C412) and set to FM.

Display



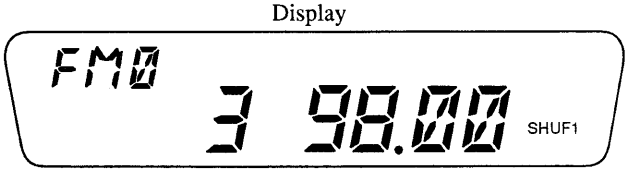
3. Push the preset [3] button.

Display



4. Adjust with the volume RV3 on TU10 so that the "FM" indication turns to "FM0" indication on the display window.
   But, in case of already indicated "FM0", turn the RV3 so that put out light "0" indication and adjustment.

Display

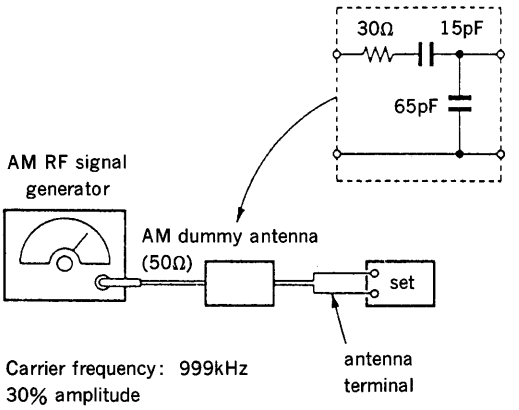


Adjustment Location : See page 17.

MW Auto Scan/Stop Level Adjustment

Setting :

MW/LW button (C410) : MW
TUNER button (C412) : MW

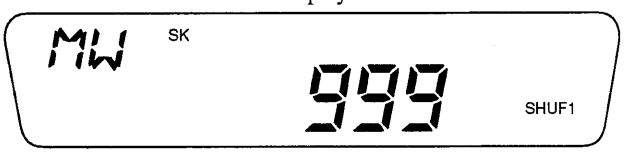


Carrier frequency: 999kHz
30% amplitude modulation by 400Hz signal
Output level : 33dB (44.7μV)

Procedure :

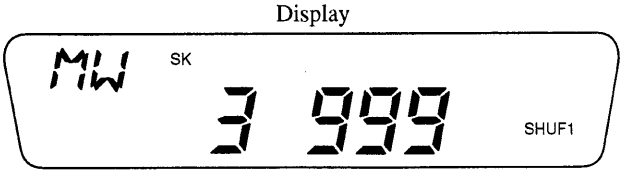
1. Set to the test mode. (See page 13.)
2. Push the [MW/LW] button (C410) or [TUNER] button (C412) and set to MW.

Display



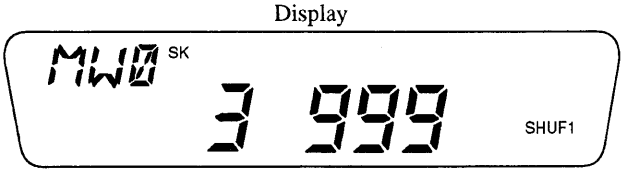
3. Push the preset [3] button.

Display



4. Adjust with the volume RV1 on TU10 so that the "MW" indication turns to "MW0" indication on the display window.
   But, in case of already indicated "MW0", turn the RV1 so that put out light "0" indication and adjustment.

Display

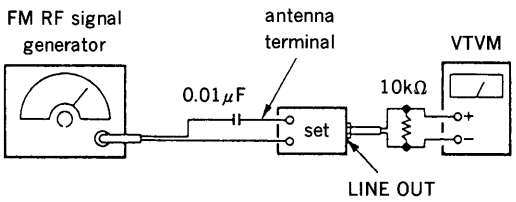


Adjustment Location : See page 17.

High Cut Control Effect Adjustment

Setting :

FM button (C410) : FM
TUNER button (C412) : FM



Carrier frequency : 98.00MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 40kHz deviation

Procedure :

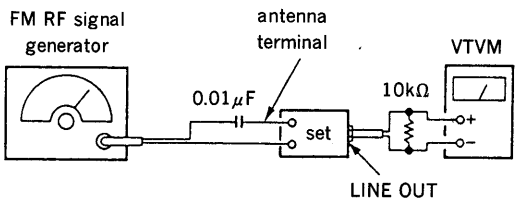
1. Tune the 98.00MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV2 on TU10 so that the output level is (A)−5dB then signal generator input set to 20dB.

Adjustment Location : See page 17.

FM Noise Focus Adjustment

Setting :

FM button (C410) : FM
TUNER button (C412) : FM



Carrier frequency : 98.00MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 10kHz, 75kHz deviation

Procedure :

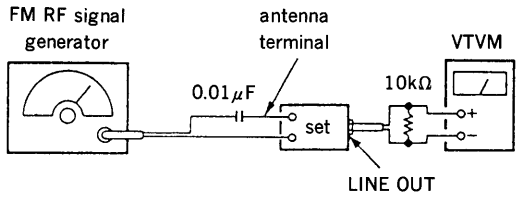
1. Tune the 98.00MHz.
2. The then output level is supposing that (B) dB.
3. Adjust with the volume RV5 on TU10 so that the output level is (B)−30dB then signal generator input set to −20dB.

Adjustment Location : See page 17.

FM Stereo Separation Adjustment

Setting :

FM button (C410) : FM
TUNER button (C412) : FM



Carrier frequency : 98.00MHz
Output level : 70dB (3.2mV)
Mode : stereo
Modulation : main : 1kHz, 20kHz deviation (53%)
sub : 1kHz, 20kHz deviation (53%)
19kHz pilot : 7.5kHz deviation (10%)

Procedure :

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 for minimum reading.

L-CH Stereo separation : Ⓐ−Ⓑ
R-CH Stereo separation : Ⓒ−Ⓓ
The separations of both channels should be equal.

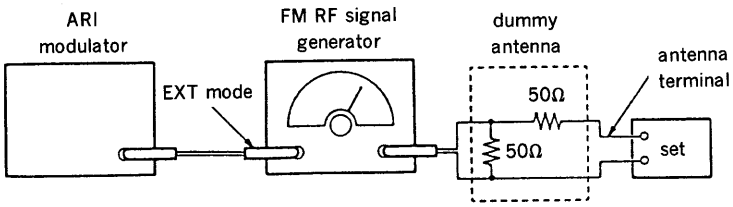
Specification : Separation more than 30dB

Adjustment Location : See page 17.

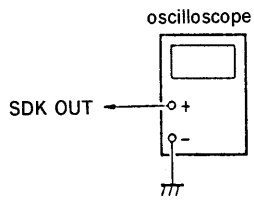
SDK Adjustment (XR-C412 only)

Setting :

SDK (Traffic Announcement) button : ON



ARI modulation	Carrier frequency	: 98.00MHz
SK : 1.5%	Output level	: 60dB (1mV)
DK : 30%	Mode	: mono
BK : 60%	Modulation	: 1kHz, 7.5kHz deviation

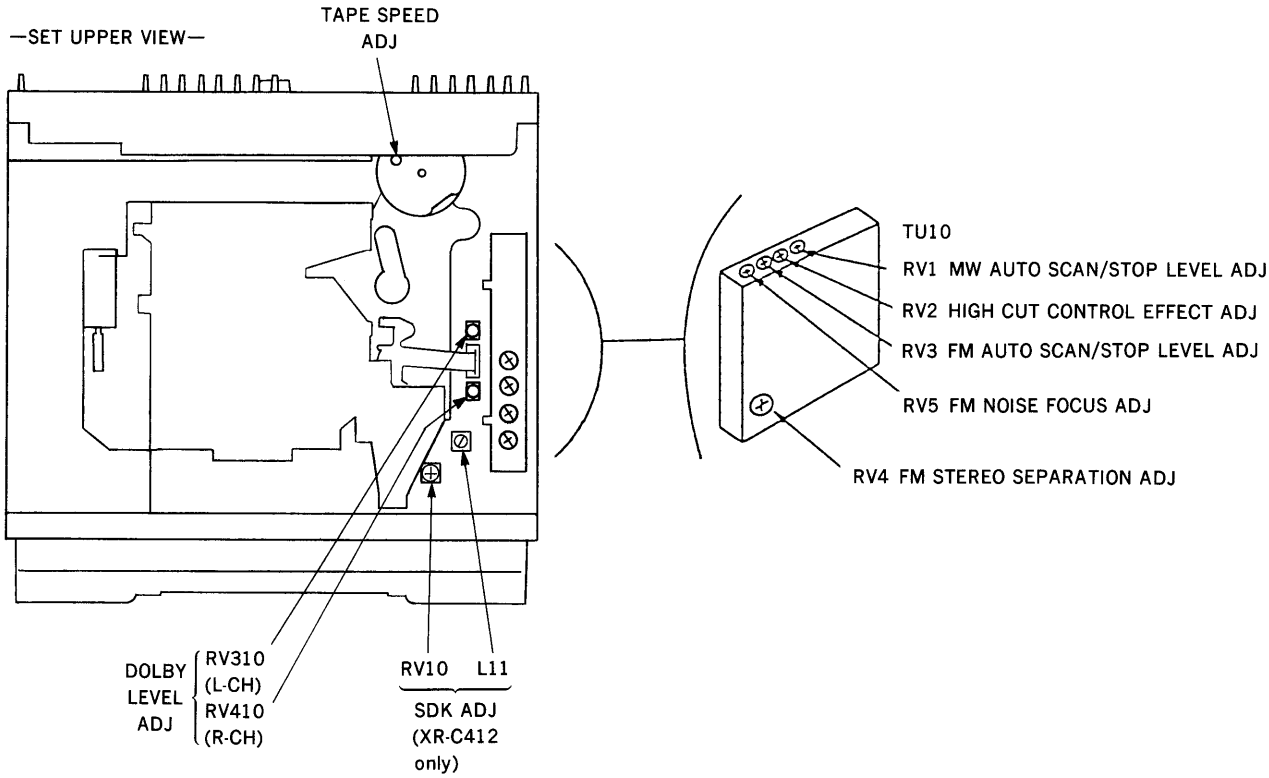


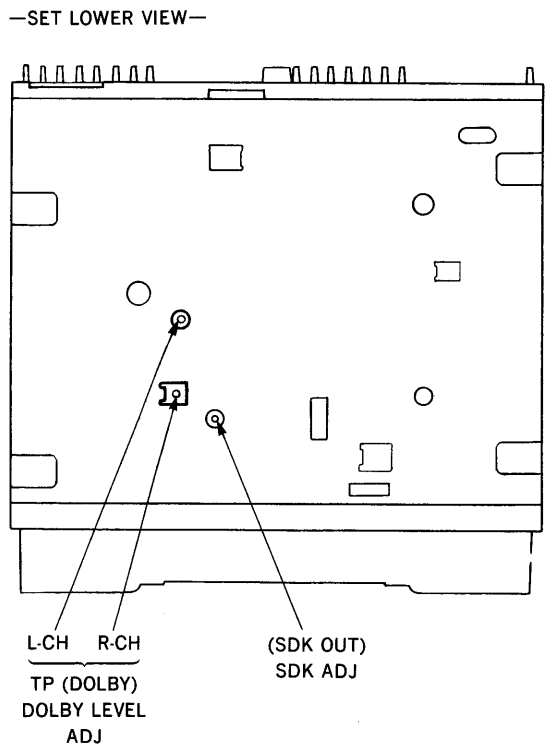
Procedure :

1. Adjust L11 and RV10 so that the output waveform become the maximum.

Adjustment Location : See page 17.

Adjustment Location :





SECTION 5
DIAGRAMS

5-1. IC PIN DESCRIPTION

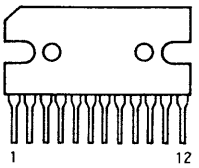
• IC510 μPD75518GF-218-3B9 (System Control)

Pin No.	Pin Name	I/O	Pin Description
1	' KI0	I	KEY input
2	VREF	I	A/D reference voltage input
3, 4	VDD	—	Power supply terminal
5	N. C	—	No connection
6	P-ON	O	At P-ON : High output
7	ILL-ON	O	At ACC-ON : High output (P-SEL : ON) At P-ON : High output (P-SEL : OFF)
8	COLOR	—	No used.
9	MUTE	O	At MUTE : High output
10	AUX-MUTE	—	No used.
11	DOLBY-ON/OFF	O	At DOLBY-NR ON : Low output
12	TUNER-MUTE	—	Not used.
13	TAPE-MUTE	O	Except for TAPE PLAYBACK : Low output (At movement on FF, REW and AMS : High output)
14	AMP-ON	O	Inner power amplifier control terminal. At AMP-ON : High output
15	C-MOTOR	O	Capstan motor control terminal. At MOTOR-ON : High output
16	LCD-INH	O	INHIBIT signal to LCD driver IC. At Low output : Light off
17	TEST MODE	I	At Low input : TEST MODE 1. Input available at timing only of RESET L to H and BU CHECK L to H.
18	LCD-DATA	O	DATA output terminal to LCD driver IC.
19	LCD-CLK	O	CLOCK output terminal to LCD driver IC.
20	LCD-CE	O	LATCH output terminal to LCD driver IC.
21	VOL-CE	O	LATCH output terminal to VOL IC.
22	PLL-CE	O	LATCH output terminal to PLL IC.
23	VOL. PLL-CLK	O	CLOCK output terminal to VOL and PLL IC.
24	VOL. PLL-DATA	O	DATA output terminal to VOL and PLL IC.
25	PLL DATA IN	I	DATA input terminal from PLL IC.
26	NOR/MTL	I/O	At AUTO METAL : METAL input terminal. At METAL : Low input, at NORMAL : High input. At no AUTO METAL : METAL output terminal. At METAL : Low output, at NORMAL : High input.
27	EJECT	O	LOADING MOTOR control terminal. At moving in the direction of EJECT : High output.
28	LOAD	O	LOADING MOTOR control terminal. At moving in the direction of LOAD and PLAY.
29—32	POS4—POS1	I	MD position detection terminal
33	GND	—	GND
34	REEL2	I	MD reel table rotation detection terminal. FWD supply side
35	REEL1	I	MD reel table rotation detection terminal. FWD take-up side
36	AUT-MTL	—	Connect to GND.
37	AMS-IN	I	TAPE music with/without detection terminal. Low input : With music, High input : Without music
38	EEPROM-DATA	—	Connect to GND.
39	EEPROM-CLK	—	Not used.
40	N/R	O	NORMAL/$\overline{\text{REVERSE}}$ output terminal
41	TAPE-ON	O	OR output of LM•EJECT and LM•LOAD. At one side ACTIVE : High output, at REEL detection : High output
42	SYSTEM RESET	O	UNILINK $\overline{\text{SYSTEM RESET}}$ terminal. Low output : SYSTEM RESET

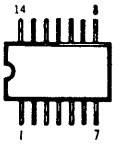
Pin No.	Pin Name	I/O	Pin Description
43	BUS-ON	O	For UNILINK terminal
44	CLK-OUT	O	For UNILINK terminal
45	BEEP	O	For piezoelectric buzzer output terminal
46	ACC-CHECK	I	Accessory detection terminal, Low input : ACC ON
47	KEY-ACK	I	KEY ACKNOWLEDGE input terminal. For KEY insert input
48	C-ALARM	I	Caution alarm with/without initial setting terminal. Low input : With caution alarm
49	SIRCS-IN	I	SIRCS (REM DET) input terminal
50	DATA-IN	I	For UNILINK terminal
51	DATA-OUT	O	For UNILINK terminal
52	CLK-IN	I	For UNILINK terminal
53	BU. CHECK	I	Back Up voltage detection terminal
54	VSS	—	GND
55	XT1	—	Connect to GND.
56	XT2	—	Not used.
57	IC	—	Connect to GND.
58	X1	—	Connect to crystal. (4.19MHz)
59	X2	—	Connect to crystal. (4.19MHz)
60	RESET	I	RESET input
61, 62	—	—	Connect to GND.
63	SK	I	High input : With SK
64	DK	I	High input : With DK
65	SD	I	High input : With SD
66	TEL-MUTE	I	Low input : 20dB audio mute
67	ST-IN	I	Low input : Stereo
68	N-SW	I	Low input : With front panel
69	AM-ON	O	At TUNER ON : High output
70	FM-ON	O	At FM (both playing and behind) : High output
71	KEY-ACT	O	Reverse pin ⑤ and Active output terminal
72	—	—	Not used.
73	A. GND	—	A/D GND
74	DOLBY-SEL	I	Connect to GND.
75	P-SEL	I	POWER SELECT switch input. High input : ON, Low input : OFF. (Low input : Setting without ACC position)
76	DEST1	I	Destination setting terminal
77	DEST0	I	Destination setting terminal
78	AM-S-METER	I	AM S meter input terminal
79	FM-S-METER	I	FM S meter input terminal
80	KI1	I	KEY input terminal

5-2. SEMICONDUCTOR LEAD LAYOUTS

BA3910B-V2

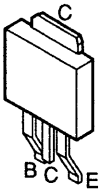


MM1175XFF

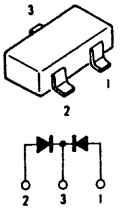


(TOP VIEW)

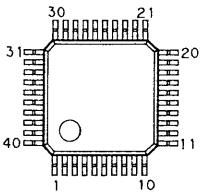
2SD1802-S



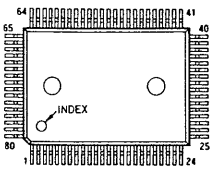
1SS184



CXA1580-T4

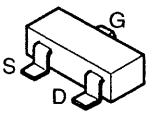


MSM6660-01GS-V1K
μPD75518GF-218-3B9

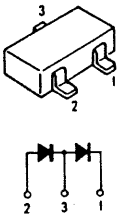


(TOP VIEW)

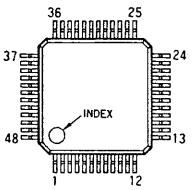
2SK1657-T1B



1SS226

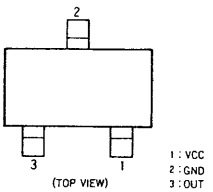


CXA1646Q



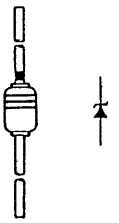
(TOP VIEW)

PST600EMT-T1

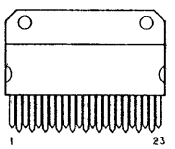


(TOP VIEW)

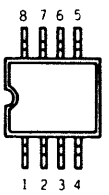
MA4039-M (QZ)
MA4056-M (QZ)
MA4062-M (QZ)
MA4068-L (QZ)
MA4075-M (QZ)
MA4091-H (QZ)
MA4110-M (QZ)



HA13151A

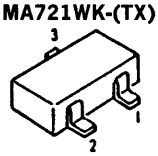


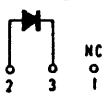
μPC4558G2



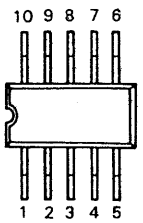
(TOP VIEW)

MA721WK-(TX)

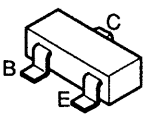




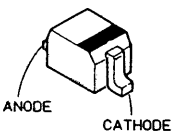
LB1638M



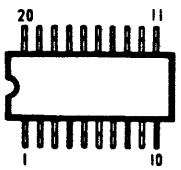
DTC314TKH04
UN2111
UN2211
2SC2712-YG



MA8051-H

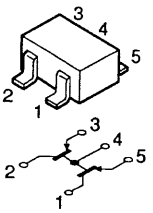


LC7216M
TDA1581T-T

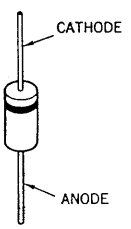


(TOP VIEW)

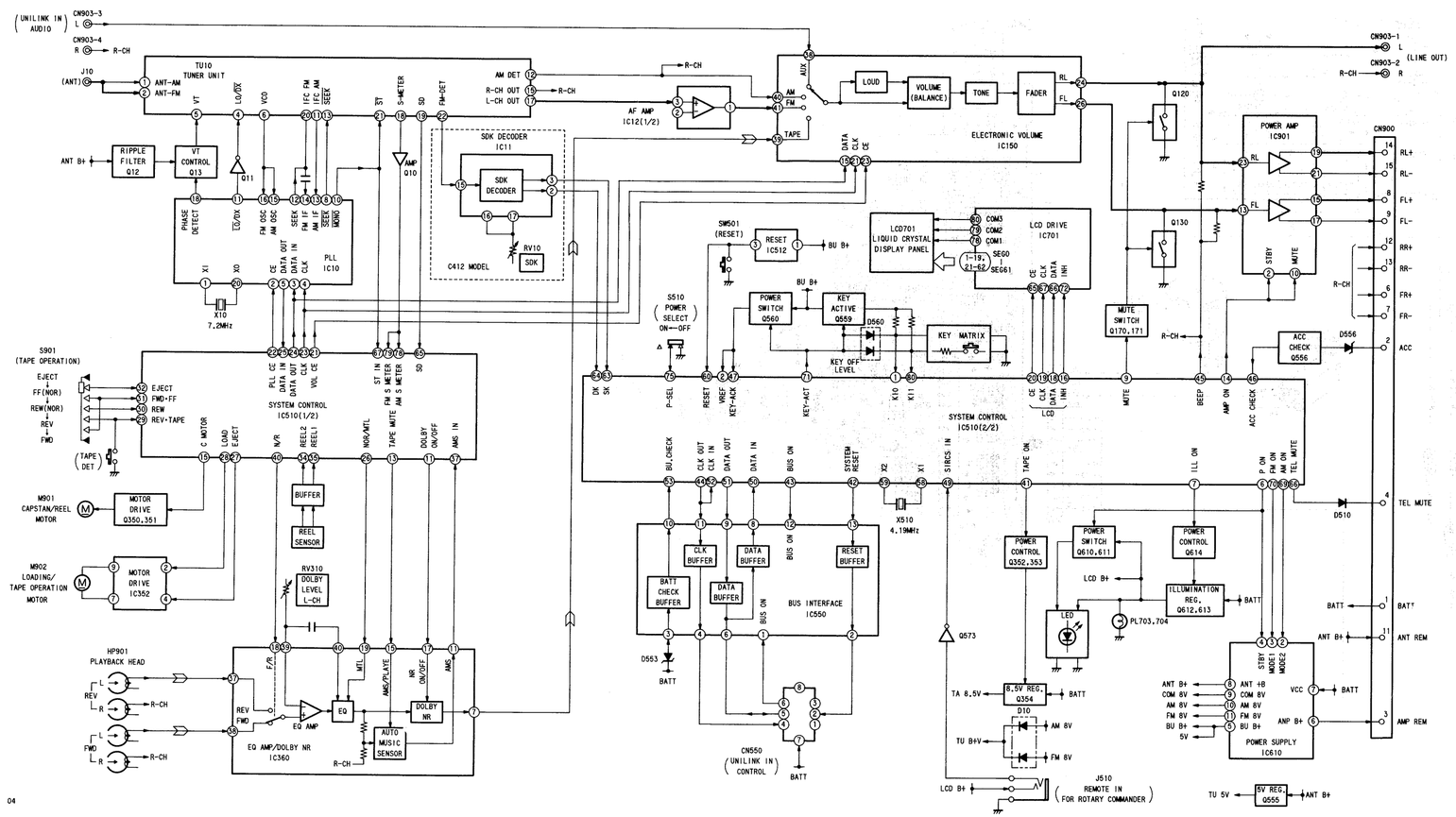
XN1A312-TX



1N5404TU

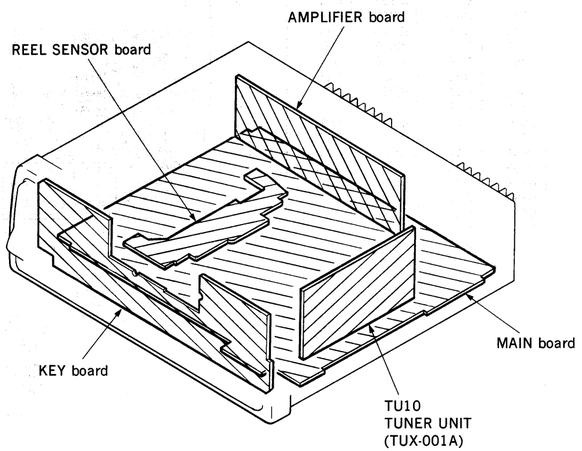


5-3. BLOCK DIAGRAM



04

5-4. CIRCUIT BOARDS LOCATION

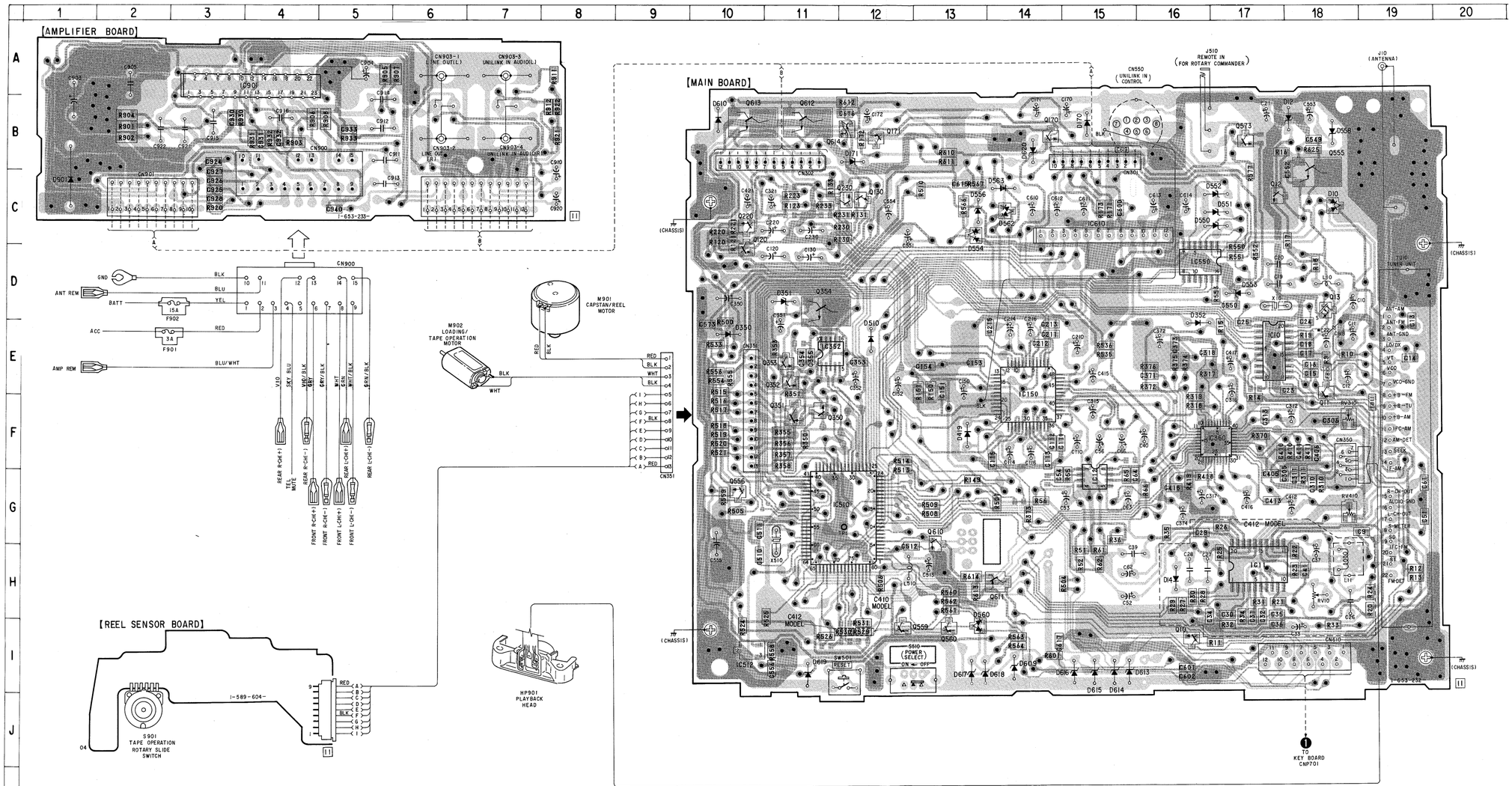


5-5. PRINTED WIRING BOARDS—MAIN SECTION— • Refer to page 20 for Semiconductor Lead Layouts.

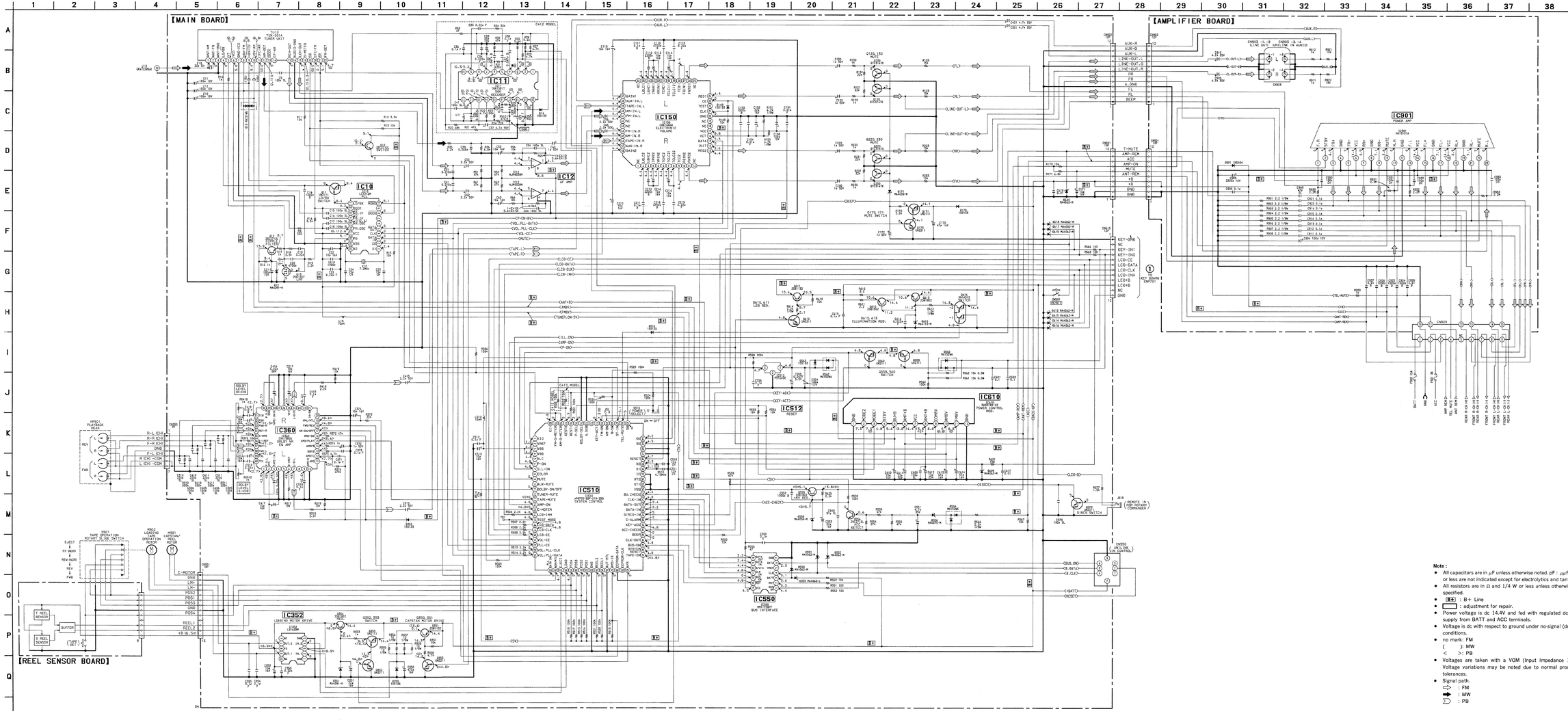
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D10	C-18	IC150	E-14
D12	B-17	IC352	E-11
D14	H-16	IC360	F-16
D170	B-15	IC510	G-11
D171	C-11	IC512	I-10
D350	E-10	IC550	D-16
D351	D-11	IC610	C-15
D352	E-16	IC901	A-3
D419	F-13		
D510	E-12	Q10	I-16
D550	C-16	Q11	E-18
D551	C-16	Q12	C-17
D552	C-16	Q13	D-18
D553	D-17	Q120	C-10
D554	C-13	Q130	C-12
D556	C-13	Q170	B-14
D558	B-18	Q171	C-11
D560	I-13	Q220	C-10
D562	C-14	Q230	C-12
D563	C-14	Q350	F-11
D609	I-14	Q351	F-11
D610	B-10	Q352	E-11
D613	I-15	Q353	E-11
D614	I-15	Q354	D-11
D615	I-15	Q555	B-18
D616	I-15	Q556	G-10
D617	I-13	Q559	I-12
D618	I-13	Q560	I-13
D619	I-11	Q573	B-17
D620	B-14	Q610	G-13
D901	C-1	Q611	H-14
		Q612	B-11
IC10	E-17	Q613	B-10
IC11	H-17	Q614	C-11
IC12	G-15		

Note :
- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern on the rear side.

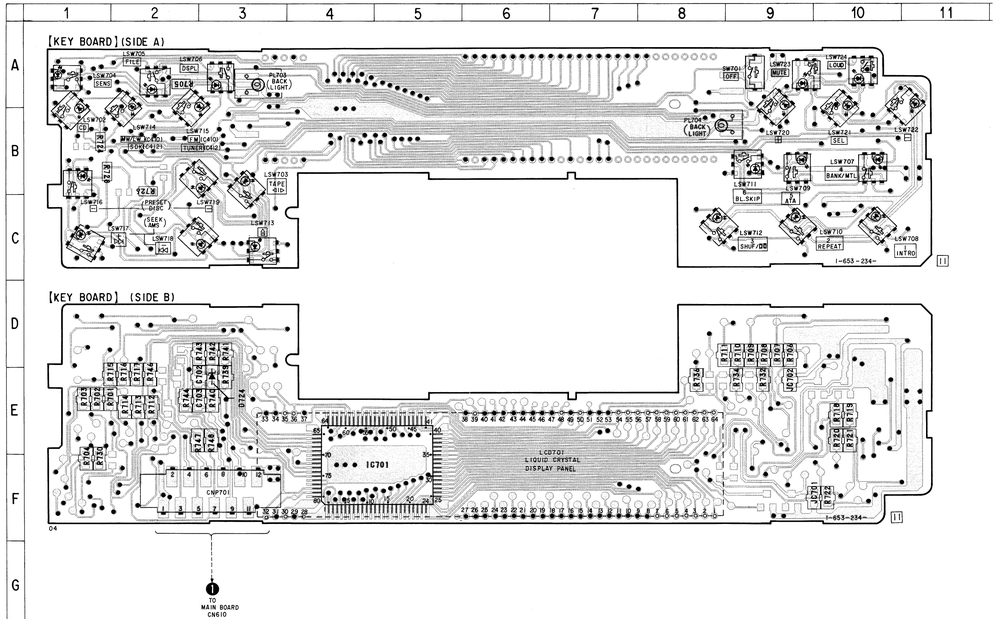


5-6. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 37 for IC Block Diagrams.



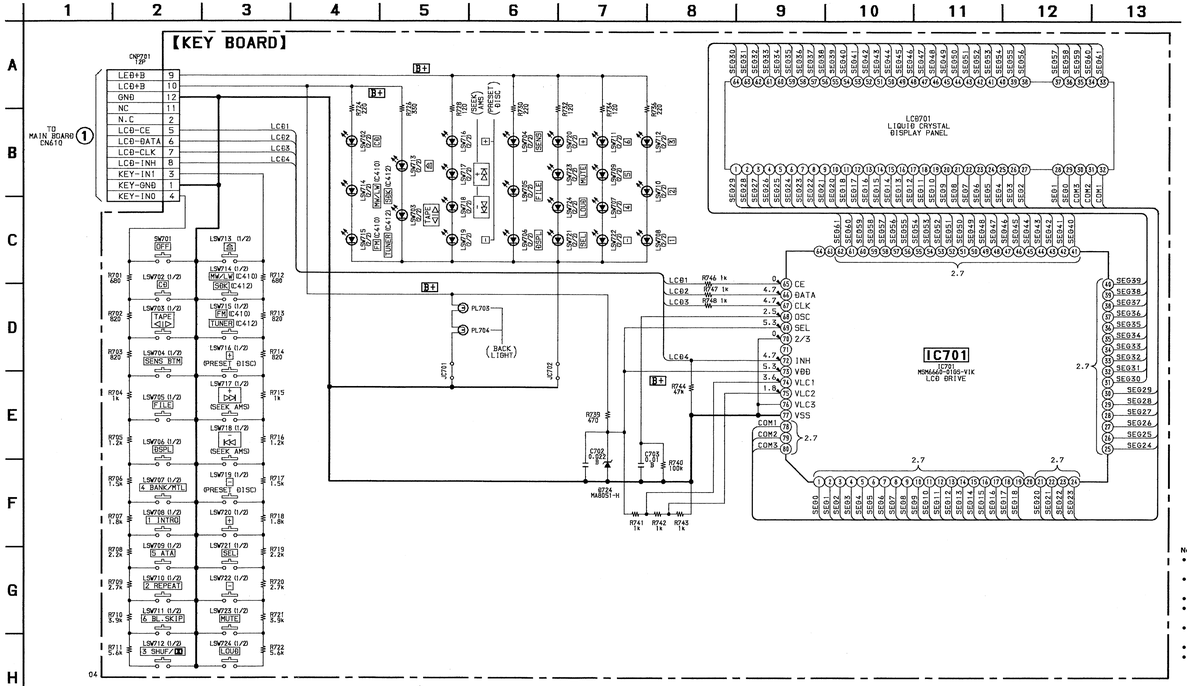
Note :
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
  ( ): MW
  < >: PB
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : FM
  : MW
  : PB

5-7. PRINTED WIRING BOARD—PANEL SECTION— • Refer to page 20 for Semiconductor Lead Layouts.



Note :
- ○— : parts extracted from the component side.
- ● : Through hole.
- ▩ : Pattern on the side which is seen.
(The other layer's patterns are not indicated.)

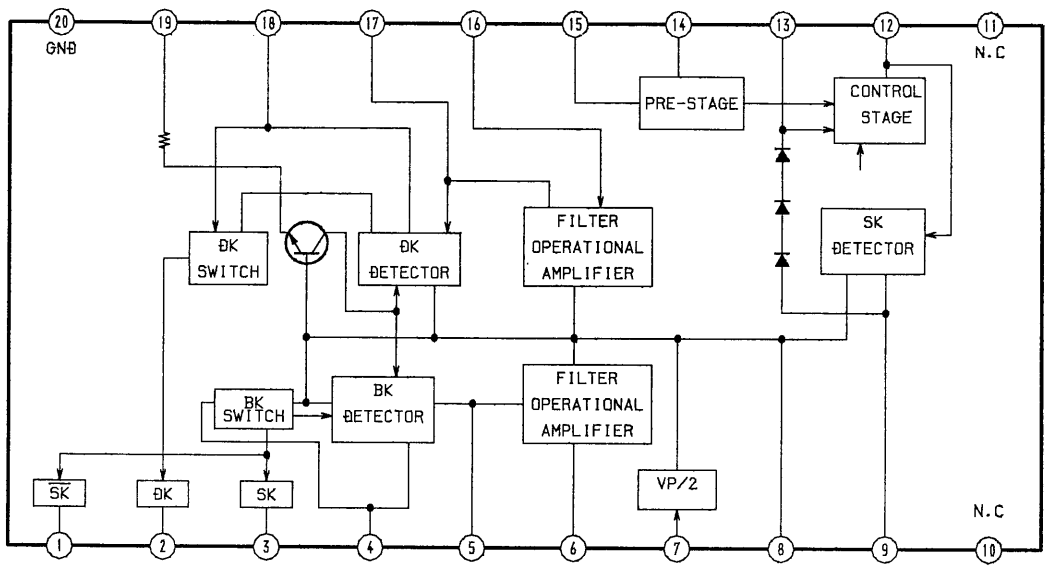
5-8. SCHEMATIC DIAGRAM—PANEL SECTION—



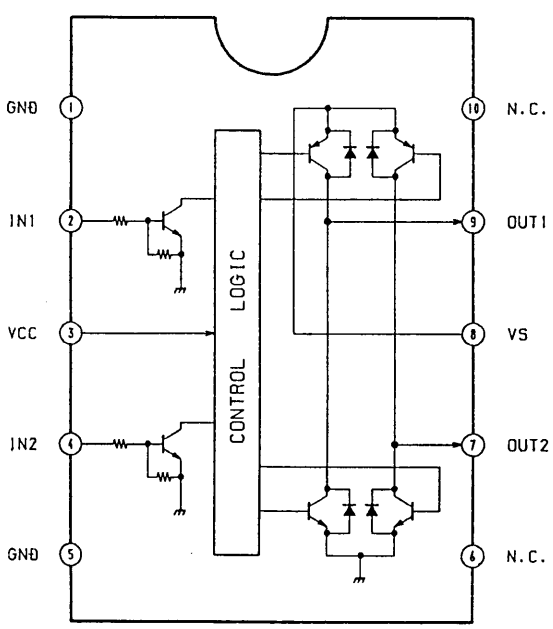
Note :
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

• IC Block Diagrams

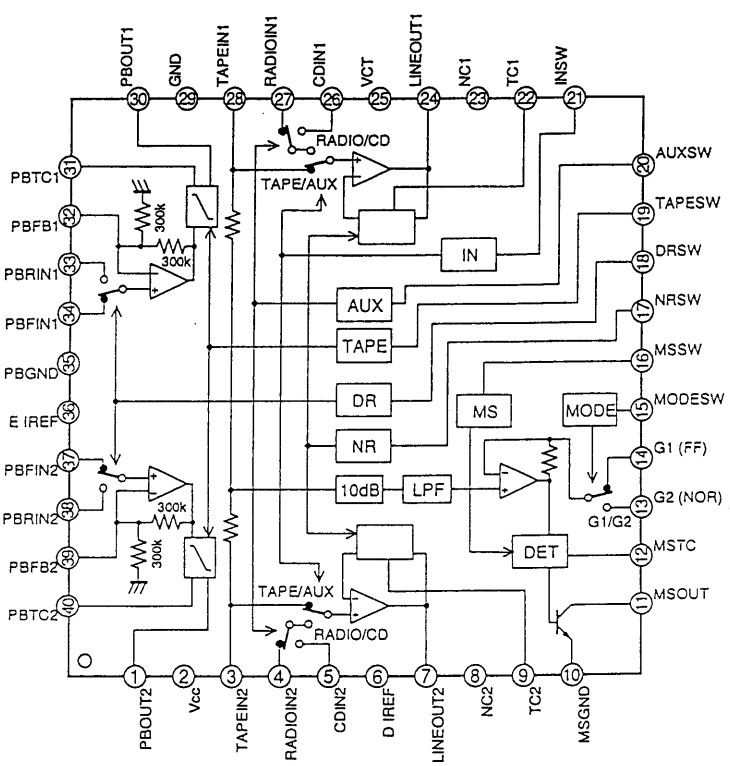
IC11 TDA1581T



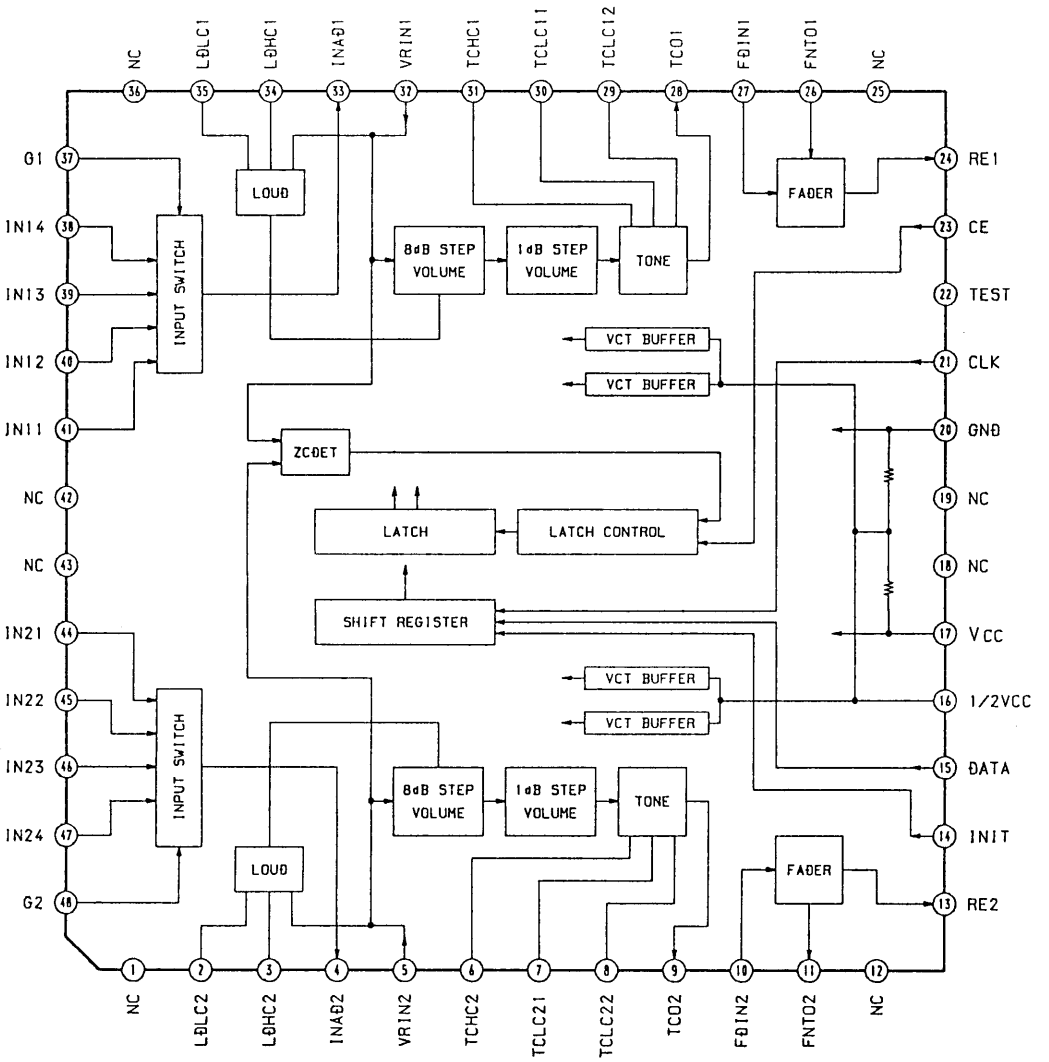
IC352 LB1638M



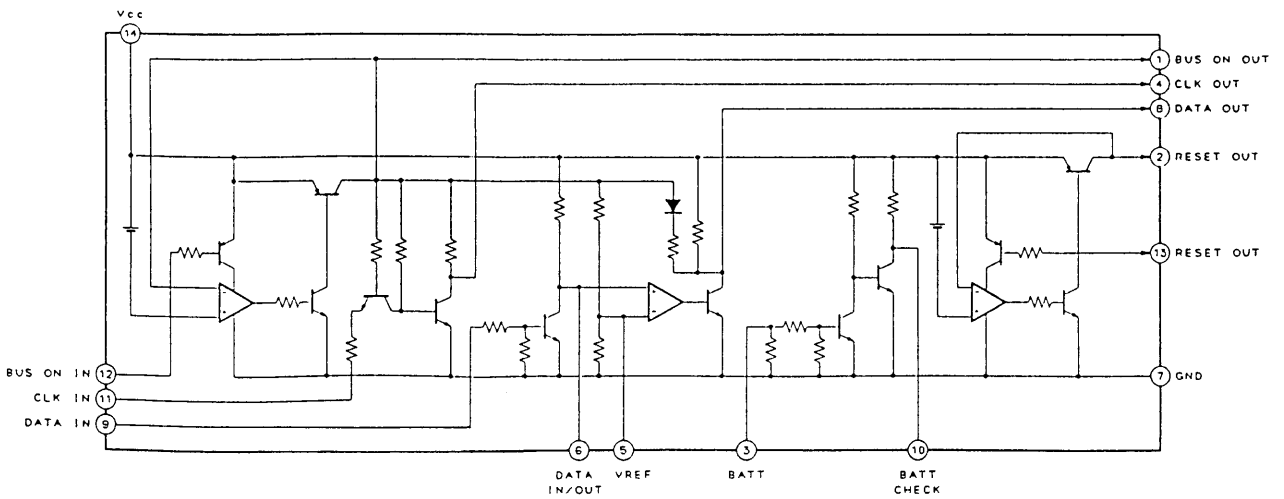
IC360 CXA1580Q



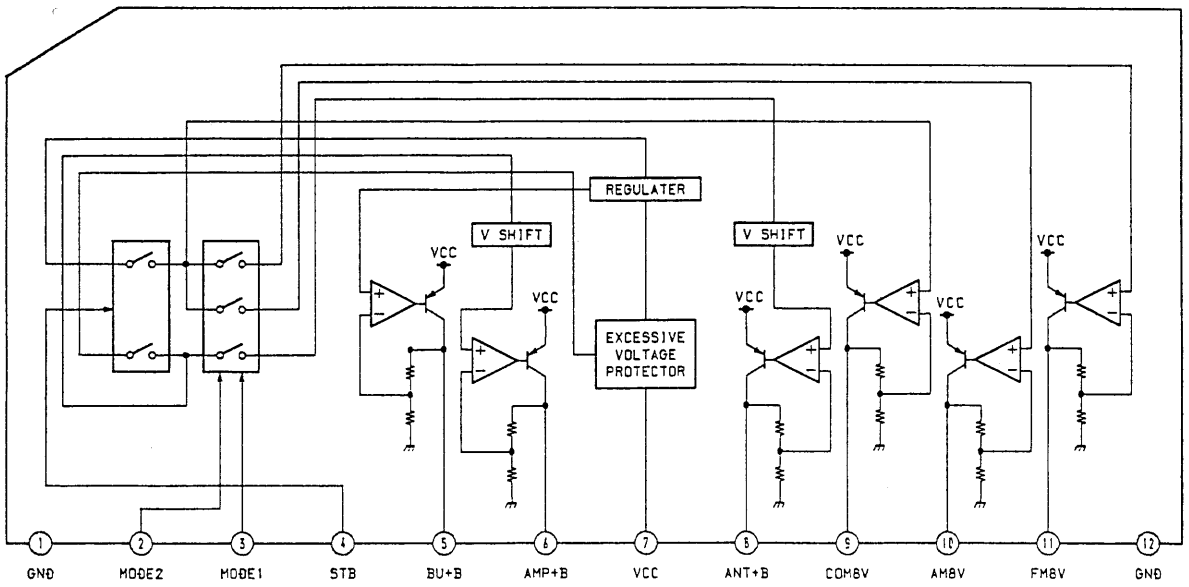
IC150 CXA1646Q



IC550 MM1175XFF



IC610 BA3910B-V2

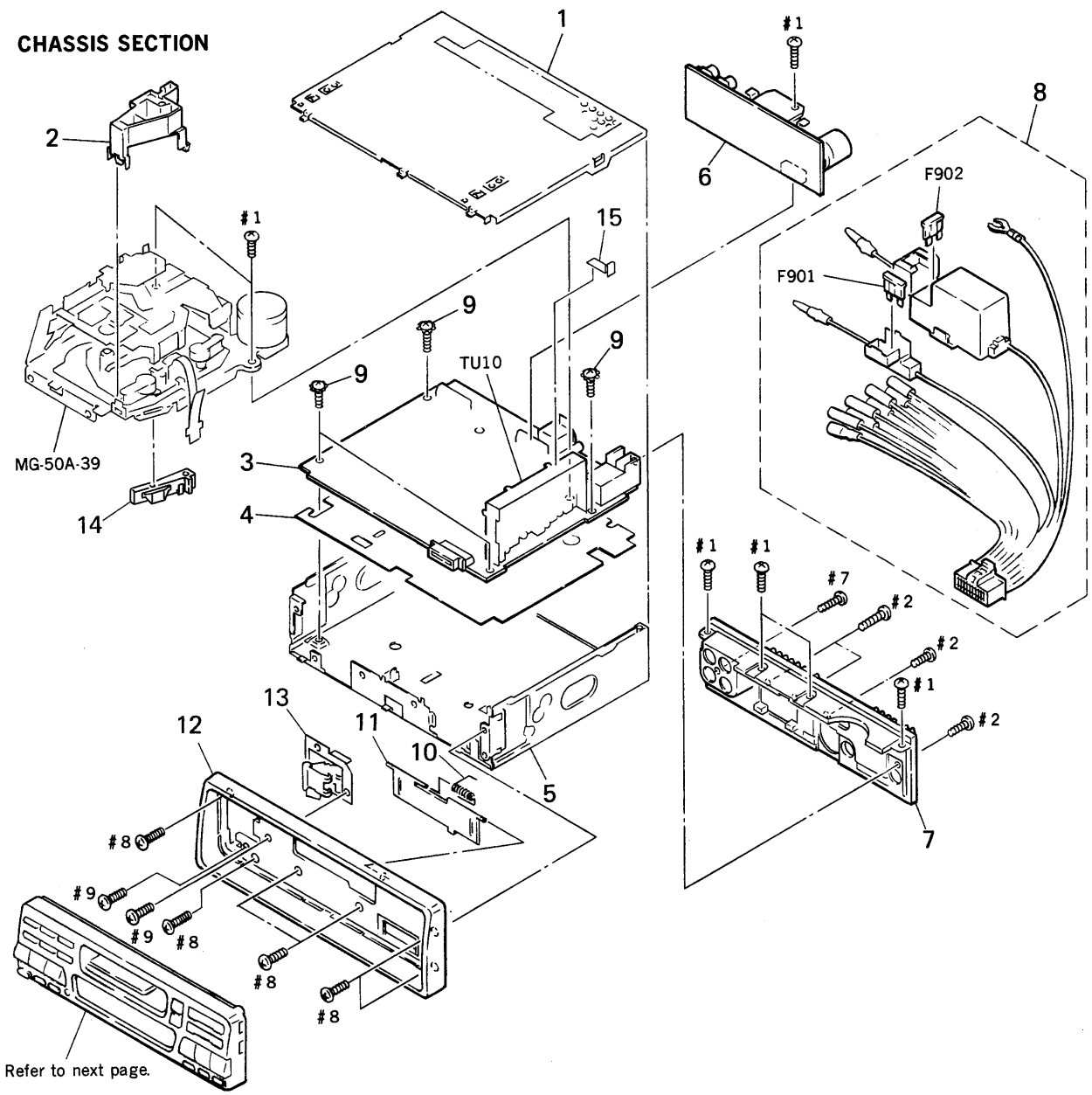


SECTION 6
EXPLODED VIEWS

NOTE:

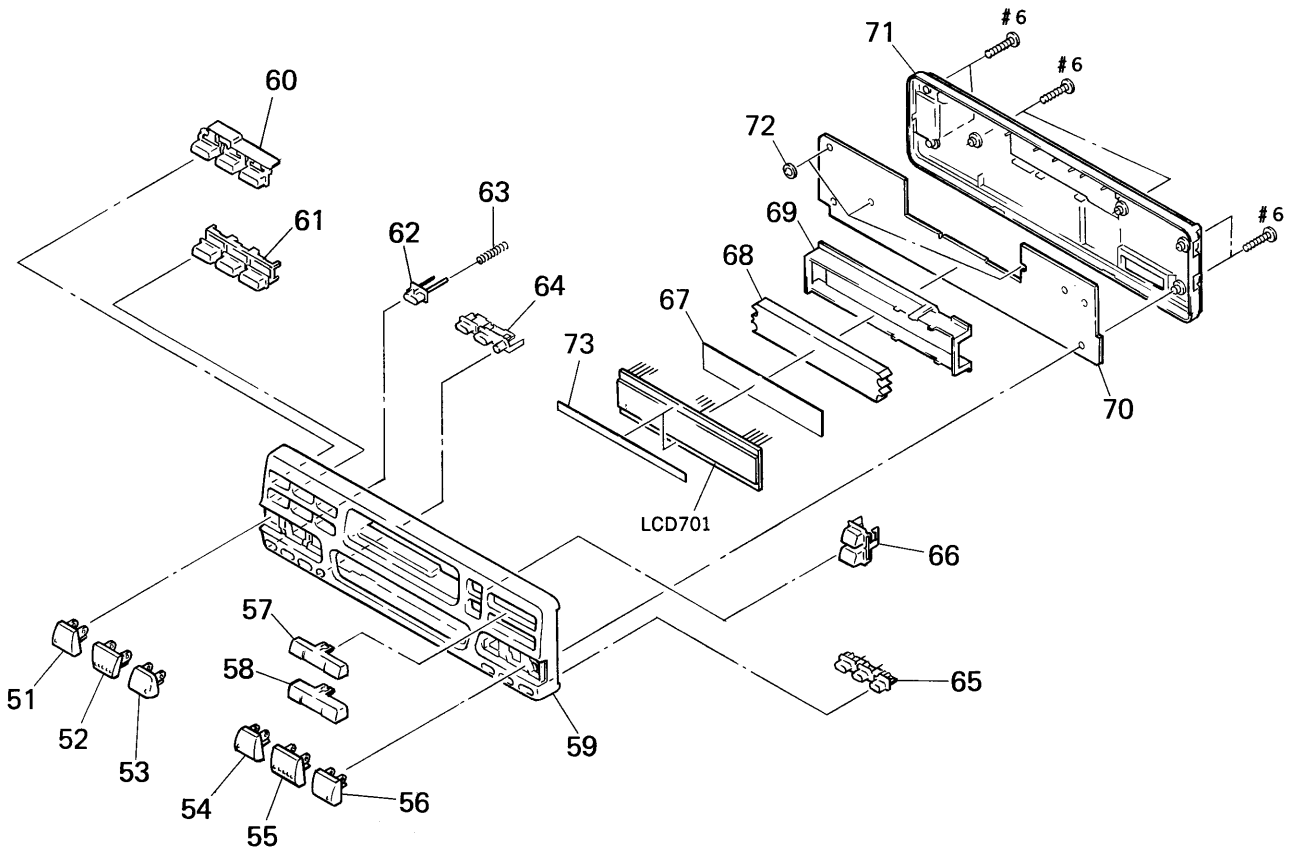
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

6-1. CHASSIS SECTION



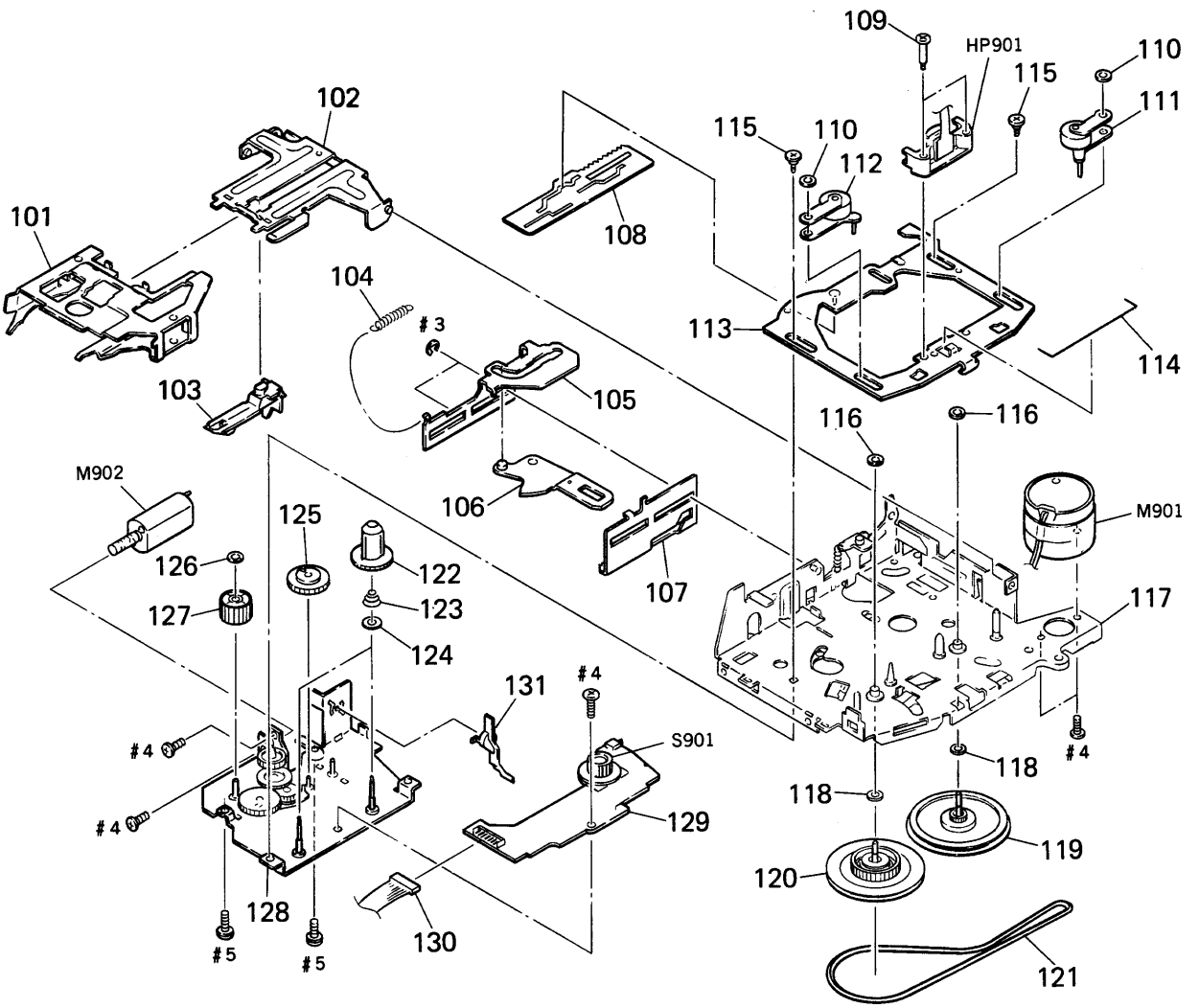
Ref. No.	Part No.	Description	Remark
* 1	X-3368-833-1	COVER ASSY	
2	3-916-872-01	GUIDE	
* 3	A-3298-241-A	MAIN BOARD, COMPLETE (C412)	
* 3	A-3298-247-A	MAIN BOARD, COMPLETE (C410)	
* 4	3-916-426-01	SHEET, INSULATING	
* 5	X-3368-832-1	CHASSIS ASSY	
* 6	A-3298-249-A	AMPLIFIER BOARD, COMPLETE	
* 7	3-916-377-11	HEAT SINK	
8	1-765-081-11	CORD (WITH CONNECTOR)	
9	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
10	3-913-076-01	SPRING (C DOOR), TORSION	
11	3-916-378-11	DOOR, CASSETTE (C410)	
11	3-916-378-21	DOOR, CASSETTE (C412)	
12	3-916-373-01	PANEL, SUB	
13	X-3367-636-1	LOCK ASSY	
14	3-918-294-01	GUIDE (BELT)	
* 15	3-355-209-01	PLATE (B), GROUND	
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)	
TU10	A-3282-003-A	TUNER UNIT (TUX-001A)	

6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-909-316-01	BUTTON (-)	
52	3-909-317-01	BUTTON (SEL)	
53	3-909-318-01	BUTTON (+)	
54	3-909-319-01	BUTTON (C) (C412)	
54	3-909-319-21	BUTTON (C) (C410)	
55	3-909-320-41	BUTTON (D) (C412)	
55	3-909-320-51	BUTTON (D) (C410)	
56	3-909-321-11	BUTTON (E)	
57	3-916-367-01	BUTTON (S/A)	
58	3-916-368-01	BUTTON (P/D)	
59	3-916-362-21	PANEL, FRONT (C410)	
59	3-916-362-31	PANEL, FRONT (C412)	
60	3-916-364-01	BUTTON (1-3)	
61	3-916-365-01	BUTTON (4-6)	
62	3-904-245-21	BUTTON (RELEASE)	
63	3-904-193-01	SPRING (RELEASE)	
64	3-916-369-01	BUTTON (MUTE)	
65	3-916-371-01	BUTTON (FILE)	
66	3-916-366-01	BUTTON (EJECT)	
* 67	3-917-845-01	REFLECTOR, SHEET	
* 68	3-389-673-01	PLATE (M:LCD), LIGHT GUIDE	
* 69	3-913-756-01	HOLDER (LCD)	
* 70	A-3298-245-A	KEY BOARD, COMPLETE (GREEN)	
* 70	A-3298-251-A	KEY BOARD, COMPLETE (AMBER)	
71	3-916-363-01	PANEL, FRONT BACK	
* 72	3-360-121-11	SPACER (W)	
* 73	3-917-781-01	SHEET (B)	
LCD701	1-810-571-11	DISPLAY PANEL, LIQUID CRYSTAL	

6-3. MECHANISM DECK SECTION (MG-50A-39)



Ref. No.	Part No.	Description	Remark
101	3-912-881-01	HOUSING, CASSETTE	
* 102	3-912-882-01	HANGER, HOUSING	
103	3-912-884-01	CATCHER	
104	3-912-885-01	SPRING (LOADING LEVER), TENSION	
* 105	3-912-892-01	LEVER (B), LOADING	
* 106	3-912-883-01	ARM, SUCTION	
* 107	3-912-891-01	LEVER (A), LOADING	
* 108	3-912-876-01	LEVER, MODE	
109	3-912-893-01	SCREW, HEAD FITTING	
110	3-579-788-01	WASHER, STOPPER	
111	X-3368-266-1	PINCH LEVER (F) ASSY	
112	X-3368-267-1	PINCH LEVER (R) ASSY	
* 113	X-3368-268-1	BASE ASSY, HEAD	
114	3-912-879-01	SPRING, PINCH PRESS	
115	3-912-897-01	SCREW (HB), STEP	
116	3-364-151-01	WASHER	
117	X-3368-844-1	CHASSIS (SV) ASSY (A), MECHANICAL	
118	3-701-437-21	WASHER	

Ref. No.	Part No.	Description	Remark
119	3-913-825-01	FLYWHEEL (FZ)	
120	X-3369-124-1	CLUTCH (S) ASSY, FR	
121	3-912-896-01	BELT	
122	X-3368-843-1	GEAR ASSY, REEL	
123	3-917-222-01	SPRING (B-T), COIL	
124	3-917-324-01	WASHER (B-T)	
125	3-912-888-01	GEAR (LOADING E)	
126	3-321-813-01	WASHER, COTTER POLYETHYLENE	
127	3-912-889-01	GEAR (LOADING F)	
128	X-3368-842-1	BRACKET ASSY, REEL	
129	1-589-604-11	REEL SENSOR BOARD	
130	1-765-460-11	CORD (WITH CONNECTOR)	
131	3-912-895-01	LEVER (TAPE IN)	
HP901	1-500-105-11	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN	
M902	X-3368-685-1	MOTOR ASSY, SUB	
S901	1-692-885-12	SWITCH, ROTARY SLIDE (TAPE OPERATION)	

SECTION 7
ELECTRICAL PARTS LIST

AMPLIFIER **KEY**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA . . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. . uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3298-249-A	AMPLIFIER BOARD, COMPLETE			
		**********			
*	3-916-377-11	HEAT SINK			
	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT			
	7-621-770-67	SCREW +PTT 2.6X6 (S)			
	7-621-770-XX	SCREW +PTT 2.6X8 (S)			
		< CAPACITOR >			
C903	1-126-768-11	ELECT	2200uF	20%	16V
C904	1-124-584-00	ELECT	100uF	20%	10V
C905	1-130-495-71	MYLAR	0.1uF	5%	50V
C910	1-126-163-11	ELECT	4.7uF	20%	50V
C911-916					
	1-130-495-71	MYLAR	0.1uF	5%	50V
C920	1-126-163-11	ELECT	4.7uF	20%	50V
C921	1-130-495-71	MYLAR	0.1uF	5%	50V
C922	1-130-495-71	MYLAR	0.1uF	5%	50V
C924-926					
	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C927	1-164-232-11	CERAMIC CHIP	0.01uF	10%	100V
C928	1-164-232-11	CERAMIC CHIP	0.01uF	10%	100V
C930-933					
	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C940	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
		< CONNECTOR >			
CN900	1-764-426-21	PLUG, CONNECTOR 15P			
* CN901	1-563-464-11	SOCKET, CONNECTOR 10P			
CN902	1-573-122-11	SOCKET, CONNECTOR 12P			
CN903	1-766-453-11	JACK, PIN 4P (UNILINK IN AUDIO/LINE OUT)			
		< DIODE >			
D901	8-719-049-38	DIODE 1N5404TU			
		< FUSE >			
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)			
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC901	8-759-279-87	IC HA13151A			
		< RESISTOR >			
R901-908					
	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R911	1-216-049-00	METAL CHIP	1K	5%	1/10W
R912	1-216-049-00	METAL CHIP	1K	5%	1/10W
R920	1-216-049-00	METAL CHIP	1K	5%	1/10W
R921	1-216-073-00	METAL CHIP	10K	5%	1/10W
R922	1-216-073-00	METAL CHIP	10K	5%	1/10W
R930-933					
	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
**********					
*	A-3298-245-A	KEY BOARD, COMPLETE (GREEN)			
*	A-3298-251-A	KEY BOARD, COMPLETE (AMBER)			
		**********			
*	3-389-673-01	PLATE (M:LCD), LIGHT GUIDE			
*	3-913-756-01	HOLDER (LCD)			
*	3-917-297-01	REFLECTOR, SHEET			
		< CAPACITOR >			
C702	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C703	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CNP701	1-764-423-11	PIN, CONNECTOR 12P			
		< DIODE >			
D724	8-719-422-43	DIODE MA8051-H			
		< IC >			
IC701	8-759-171-74	IC MSM6660-01GS-V1K			
		< LIQUID CRYSTAL DISPLAY >			
LCD701	1-810-571-11	DISPLAY PANEL, LIQUID CRYSTAL			

KEY

Ref. No.	Part No.	Description	Remark
		< JUMPER RESISTOR >	
JW701	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW702	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< SWITCH >	
LSW702	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (CD) (AMBER)	
LSW702	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (CD) (GREEN)	
LSW703	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (TAPE ◁I▷) (AMBER)	
LSW703	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (TAPE ◁I▷) (GREEN)	
LSW704	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (SENS BTM) (AMBER)	
LSW704	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (SENS BTM) (GREEN)	
LSW705	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (FILE) (AMBER)	
LSW705	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (FILE) (GREEN)	
LSW706	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (DSPL) (AMBER)	
LSW706	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (DSPL) (GREEN)	
LSW707	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (4 BANK/MTL) (AMBER)	
LSW707	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (4 BANK/MTL) (GREEN)	
LSW708	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (1 INTRO) (AMBER)	
LSW708	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (1 INTRO) (GREEN)	
LSW709	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (5 ATA) (AMBER)	
LSW709	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (5 ATA) (GREEN)	
LSW710	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (2 REPEAT) (AMBER)	
LSW710	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (2 REPEAT) (GREEN)	
LSW711	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6 BL. SKIP) (AMBER)	
LSW711	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (6 BL. SKIP) (GREEN)	
LSW712	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (3 SHUF/□□) (AMBER)	
LSW712	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (3 SHUF/□□) (GREEN)	
LSW713	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (⏏) (AMBER)	
LSW713	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (⏏) (GREEN)	
LSW714	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (MW/LW) (C410:AMBER)	
LSW714	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (SDK) (C412:AMBER)	
LSW714	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (MW/LW) (C410:GREEN)	
LSW714	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (SDK) (C412:GREEN)	
LSW715	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (FM) (C410:AMBER)	
LSW715	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (TUNER) (C412:AMBER)	
LSW715	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (FM) (C410:GREEN)	
LSW715	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (TUNER) (C412:GREEN)	
LSW716	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (+ (PRESET DISC)) (AMBER)	
LSW716	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (+ (PRESET DISC)) (GREEN)	
LSW717	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (+ ⏭ (SEEK AMS)) (AMBER)	
LSW717	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (+ ⏭ (SEEK AMS)) (GREEN)	
LSW718	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (- ⏮ (SEEK AMS)) (AMBER)	
LSW718	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (- ⏮ (SEEK AMS)) (GREEN)	
LSW719	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (- (PRESET DISC)) (AMBER)	
LSW719	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (- (PRESET DISC)) (GREEN)	
LSW720	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (+) (AMBER)	
LSW720	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (+) (GREEN)	
LSW721	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (SEL) (AMBER)	
LSW721	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (SEL) (GREEN)	
LSW722	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (-) (AMBER)	
LSW722	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (-) (GREEN)	
LSW723	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (MUTE) (AMBER)	
LSW723	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (MUTE) (GREEN)	

Ref. No.	Part No.	Description			Remark
LSW724	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (AMBER)			(LOUD)
LSW724	1-762-142-11	SWITCH, KEY BOARD (WITH LED) (GREEN)			(LOUD)
		< PILOT LAMP >			
PL703	1-517-165-21	LAMP, PILOT (AMBER)			
PL703	1-517-166-21	LAMP, PILOT (GREEN)			
PL704	1-517-165-21	LAMP, PILOT (AMBER)			
PL704	1-517-166-21	LAMP, PILOT (GREEN)			
		< RESISTOR >			
R701	1-216-045-00	METAL CHIP	680	5%	1/10W
R702	1-216-047-00	METAL CHIP	820	5%	1/10W
R703	1-216-047-00	METAL CHIP	820	5%	1/10W
R704	1-216-049-00	METAL CHIP	1K	5%	1/10W
R705	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R706	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R707	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R708	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R709	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R710	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R711	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R712	1-216-045-00	METAL CHIP	680	5%	1/10W
R713	1-216-047-00	METAL CHIP	820	5%	1/10W
R714	1-216-047-00	METAL CHIP	820	5%	1/10W
R715	1-216-049-00	METAL CHIP	1K	5%	1/10W
R716	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R717	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R718	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R719	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R720	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R721	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R722	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R724	1-216-033-00	METAL CHIP	220	5%	1/10W
R726	1-216-037-00	METAL CHIP	330	5%	1/10W
R728	1-216-027-00	METAL CHIP	120	5%	1/10W
R730	1-216-033-00	METAL CHIP	220	5%	1/10W
R732	1-216-027-00	METAL CHIP	120	5%	1/10W
R734	1-216-027-00	METAL CHIP	120	5%	1/10W
R736	1-216-033-00	METAL CHIP	220	5%	1/10W
R739	1-216-041-00	METAL CHIP	470	5%	1/10W
R740	1-216-097-00	METAL CHIP	100K	5%	1/10W
R741-743					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
R744	1-216-089-00	METAL CHIP	47K	5%	1/10W
R746-748					
	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
SW701	1-692-037-31	SWITCH, KEY BOARD (OFF)			
**********					
*	A-3298-241-A	MAIN BOARD, COMPLETE (C412)			
*	A-3298-247-A	MAIN BOARD, COMPLETE (C410)			
		**********			
		< CAPACITOR >			
C9	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C10-12					
	1-124-584-00	ELECT	100uF	20%	10V
C13	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C14	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C15-18					
	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C19	1-136-169-00	FILM	0.22uF	5%	50V
C20	1-130-479-00	MYLAR	0.0047uF	5%	50V
C21	1-124-584-00	ELECT	100uF	20%	10V
C22	1-126-157-11	ELECT	10uF	20%	16V
C23	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C24	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C25	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C26	1-130-477-00	MYLAR (C412)	0.0033uF	5%	50V
C27	1-136-495-11	FILM (C412)	0.068uF	5%	50V
C28	1-136-495-11	FILM (C412)	0.068uF	5%	50V
C29	1-163-038-00	CERAMIC CHIP (C412)	0.1uF		25V
C30	1-163-038-00	CERAMIC CHIP (C412)	0.1uF		25V
C31	1-163-809-11	CERAMIC CHIP (C412)	0.047uF	10%	25V
C32	1-163-809-11	CERAMIC CHIP (C412)	0.047uF	10%	25V
C33	1-124-229-00	ELECT (C412)	33uF	20%	10V
C34	1-163-033-00	CERAMIC CHIP (C412)	0.022uF		50V
C35	1-164-222-11	CERAMIC CHIP (C412)	0.22uF		25V
C36	1-163-038-00	CERAMIC CHIP (C412)	0.1uF		25V
C37	1-126-163-11	ELECT (C412)	4.7uF	20%	50V
C39	1-136-495-11	FILM	0.068uF	5%	50V
C40	1-162-841-11	ELECT	0.015uF	10%	16V
C41	1-163-117-00	CERAMIC CHIP (C412)	100PF	5%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C51	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C52	1-124-257-00	ELECT	2.2uF	20%	50V
C53	1-126-157-11	ELECT	10uF	20%	16V
C54	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C56	1-124-257-00	ELECT	2.2uF	20%	50V
C61	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C62	1-124-257-00	ELECT	2.2uF	20%	50V
C63	1-126-157-11	ELECT	10uF	20%	16V
C64	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C66	1-124-257-00	ELECT	2.2uF	20%	50V
C110	1-126-157-11	ELECT	10uF	20%	16V
C111	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C112	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C113	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C114	1-126-157-11	ELECT	10uF	20%	16V
C115	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C116	1-126-157-11	ELECT	10uF	20%	16V
C120	1-126-044-11	ELECT	1uF	20%	50V
C130	1-126-044-11	ELECT	1uF	20%	50V
C150	1-124-584-00	ELECT	100uF	20%	10V
C151	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C152	1-124-234-00	ELECT	22uF	20%	16V
C153	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C154	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C170	1-124-589-11	ELECT	47uF	20%	16V
C171	1-126-157-11	ELECT	10uF	20%	16V
C172	1-126-301-11	ELECT	1uF	20%	50V
C210	1-126-157-11	ELECT	10uF	20%	16V
C211	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C212	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C213	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C214	1-126-157-11	ELECT	10uF	20%	16V
C215	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C216	1-126-157-11	ELECT	10uF	20%	16V
C220	1-126-044-11	ELECT	1uF	20%	50V
C230	1-126-044-11	ELECT	1uF	20%	50V
C305	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C306	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C310	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C311	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C312	1-126-157-11	ELECT	10uF	20%	16V
C313	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C315	1-124-257-00	ELECT	2.2uF	20%	50V
C316	1-124-464-11	ELECT	0.22uF	20%	50V
C317	1-126-157-11	ELECT	10uF	20%	16V
C318	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C321	1-126-163-11	ELECT	4.7uF	20%	50V
C350	1-126-935-11	ELECT	470uF	20%	16V
C351	1-124-234-00	ELECT	22uF	20%	16V

Ref. No.	Part No.	Description			Remark
C352	1-126-157-11	ELECT	10uF	20%	16V
C353	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C354	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C355	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C371	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C372	1-126-301-11	ELECT	1uF	20%	50V
C373	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C374	1-126-157-11	ELECT	10uF	20%	16V
C405	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C406	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C410	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C411	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C412	1-126-157-11	ELECT	10uF	20%	16V
C413	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C415	1-124-257-00	ELECT	2.2uF	20%	50V
C416	1-124-464-11	ELECT	0.22uF	20%	50V
C417	1-126-157-11	ELECT	10uF	20%	16V
C418	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C421	1-126-163-11	ELECT	4.7uF	20%	50V
C510	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C511	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C512	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C513	1-126-157-11	ELECT	10uF	20%	16V
C549	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C550	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C551	1-126-163-11	ELECT	4.7uF	20%	50V
C552	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C553	1-124-234-00	ELECT	22uF	20%	16V
C554	1-124-584-00	ELECT	100uF	20%	10V
C555	1-125-701-11	DOUBLE LAYER	0.047F		5.5V
C556	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C573	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C600	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C601	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C602	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C610	1-126-157-11	ELECT	10uF	20%	16V
C611	1-124-234-00	ELECT	22uF	20%	16V
C612	1-104-940-11	ELECT	10uF	20%	25V
C613	1-124-589-11	ELECT	47uF	20%	16V
C614	1-124-589-11	ELECT	47uF	20%	16V
C615	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C616	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C617	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C618	1-162-294-31	CERAMIC CHIP	0.001uF	10%	50V
C619	1-164-232-11	CERAMIC CHIP	0.01uF	10%	50V

MAIN

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CN301	1-506-981-11	PIN, CONNECTOR 10P	
CN302	1-573-121-11	PIN, CONNECTOR 12P	
CN350	1-766-260-11	CONNECTOR, FFC/FPC (ZIF) 7P	
* CN351	1-506-995-11	PIN, CONNECTOR (PC BOARD) 13P	
CN550	1-580-907-31	PLUG, CONNECTOR (UNILINK IN CONTROL)	
CN610	1-764-422-11	PLUG, CONNECTOR 12P	
		< DIODE >	
D10	8-719-040-04	DIODE MA721WK-(TX)	
D12	8-719-034-63	DIODE MA4091-H(QZ)	
D14	8-719-800-76	DIODE 1SS226 (C412)	
D170	8-719-800-76	DIODE 1SS226	
D171	8-719-034-22	DIODE MA4039-M(QZ)	
D350	8-719-800-76	DIODE 1SS226	
D351	8-719-034-63	DIODE MA4091-H(QZ)	
D352	8-719-800-76	DIODE 1SS226	
D419	8-719-800-76	DIODE 1SS226	
D510	8-719-800-76	DIODE 1SS226	
D550	8-719-034-46	DIODE MA4062-M(QZ)	
D551	8-719-034-46	DIODE MA4062-M(QZ)	
D552	8-719-034-46	DIODE MA4062-M(QZ)	
D553	8-719-034-49	DIODE MA4068-L(QZ)	
D554	8-719-801-78	DIODE 1SS184	
D556	8-719-034-54	DIODE MA4075-M(QZ)	
D558	8-719-034-42	DIODE MA4056-M(QZ)	
D560	8-719-400-20	DIODE MA152WA	
D562	8-719-400-20	DIODE MA152WA	
D563	8-719-800-76	DIODE 1SS226	
D609	8-719-034-46	DIODE MA4062-M(QZ)	
D610	8-719-034-70	DIODE MA4110-M(QZ)	
D613	8-719-034-46	DIODE MA4062-M(QZ)	
D614	8-719-034-46	DIODE MA4062-M(QZ)	
D615	8-719-034-46	DIODE MA4062-M(QZ)	
D616	8-719-034-46	DIODE MA4062-M(QZ)	
D617	8-719-034-46	DIODE MA4062-M(QZ)	
D618	8-719-034-46	DIODE MA4062-M(QZ)	
D619	8-719-034-46	DIODE MA4062-M(QZ)	
D620	8-719-034-46	DIODE MA4062-M(QZ)	
		< FERRITE BEAD >	
FB10	1-414-233-21	INDUCTOR, FERRITE BEAD	
FB11	1-414-233-21	INDUCTOR, FERRITE BEAD	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC10	8-759-823-81	IC LC7216M	
IC11	8-759-274-75	IC TDA1581T-T (C412)	
IC12	8-759-100-96	IC uPC4558G2	
IC150	8-752-063-44	IC CXA1646Q	
IC352	8-759-823-87	IC LB1638M	
IC360	8-752-070-22	IC CXA1580Q-T4	
IC510	8-759-284-02	IC uPD75518GF-218-3B9	
IC512	8-759-167-83	IC PST600EMT-T1	
IC550	8-759-096-16	IC MM1175XFF	
IC610	8-759-182-75	IC BA3910B-V2	
		< JACK >	
J10	1-764-808-12	JACK (ANT) (ANTENNA)	
J510	1-566-822-11	JACK (REMOTE IN FOR ROTARY COMMANDER)	
		< COIL >	
L10	1-410-509-61	INDUCTOR 10uH	
L11	1-409-748-11	COIL (FILTER) (C412)	
L510	1-410-509-61	INDUCTOR 10uH	
		< TRANSISTOR >	
Q10	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q11	8-729-424-08	TRANSISTOR UN2111	
Q12	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q13	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q120	8-729-920-21	TRANSISTOR DTC314TKH04	
Q130	8-729-920-21	TRANSISTOR DTC314TKH04	
Q170	8-729-421-22	TRANSISTOR UN2211	
Q171	8-729-424-08	TRANSISTOR UN2111	
Q220	8-729-920-21	TRANSISTOR DTC314TKH04	
Q230	8-729-920-21	TRANSISTOR DTC314TKH04	
Q350	8-729-421-22	TRANSISTOR UN2211	
Q351	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q352	8-729-421-22	TRANSISTOR UN2211	
Q353	8-729-424-08	TRANSISTOR UN2111	
Q354	8-729-807-12	TRANSISTOR 2SD1802-S	
Q555	8-729-807-12	TRANSISTOR 2SD1802-S	
Q556	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q559	8-729-424-08	TRANSISTOR UN2111	
Q560	8-729-424-08	TRANSISTOR UN2111	
Q573	8-729-421-22	TRANSISTOR UN2211	
Q610	8-729-421-22	TRANSISTOR UN2211	
Q611	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q612	8-729-807-12	TRANSISTOR 2SD1802-S	
Q613	8-729-807-12	TRANSISTOR 2SD1802-S	
Q614	8-729-020-67	TRANSISTOR XN1A312-TX	

MAIN

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R9	1-216-037-00	METAL CHIP	330	5%	1/10W
R10	1-216-049-00	METAL CHIP	1K	5%	1/10W
R11	1-216-073-00	METAL CHIP	10K	5%	1/10W
R12	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R13	1-216-073-00	METAL CHIP	10K	5%	1/10W
R14	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R15	1-216-073-00	METAL CHIP	10K	5%	1/10W
R16	1-216-049-00	METAL CHIP	1K	5%	1/10W
R17	1-216-049-00	METAL CHIP	1K	5%	1/10W
R18	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R19	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R20	1-216-093-00	METAL CHIP	68K	5%	1/10W (C412)
R21	1-216-089-00	METAL CHIP	47K	5%	1/10W (C412)
R22	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (C412)
R23	1-216-097-00	METAL CHIP	100K	5%	1/10W (C412)
R24	1-216-033-00	METAL CHIP	220	5%	1/10W (C412)
R25	1-216-117-00	METAL CHIP	680K	5%	1/10W (C412)
R26	1-216-105-00	METAL CHIP	220K	5%	1/10W (C412)
R27	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (C412)
R28	1-216-067-00	METAL CHIP	5.6K	5%	1/10W (C412)
R29	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (C412)
R30	1-216-067-00	METAL CHIP	5.6K	5%	1/10W (C412)
R31	1-216-116-00	METAL CHIP	620K	5%	1/10W (C412)
R32	1-216-089-00	METAL CHIP	47K	5%	1/10W (C412)
R33	1-216-017-00	METAL CHIP	47	5%	1/10W (C412)
R34	1-216-085-00	METAL CHIP	33K	5%	1/10W (C412)
R35	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R36	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R51	1-216-089-00	METAL CHIP	47K	5%	1/10W
R52	1-216-089-00	METAL CHIP	47K	5%	1/10W
R55	1-216-049-00	METAL CHIP	1K	5%	1/10W (C410)
R55	1-216-067-00	METAL CHIP	5.6K	5%	1/10W (C412)
R56	1-216-073-00	METAL CHIP	10K	5%	1/10W
R61	1-216-089-00	METAL CHIP	47K	5%	1/10W
R62	1-216-089-00	METAL CHIP	47K	5%	1/10W
R65	1-216-049-00	METAL CHIP	1K	5%	1/10W (C410)
R65	1-216-067-00	METAL CHIP	5.6K	5%	1/10W (C412)
R66	1-216-073-00	METAL CHIP	10K	5%	1/10W
R120	1-216-049-00	METAL CHIP	1K	5%	1/10W
R121	1-216-081-00	METAL CHIP	22K	5%	1/10W
R123	1-216-077-00	METAL CHIP	15K	5%	1/10W
R130	1-216-049-00	METAL CHIP	1K	5%	1/10W
R131	1-216-081-00	METAL CHIP	22K	5%	1/10W
R133	1-216-077-00	METAL CHIP	15K	5%	1/10W
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R150	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W
R151	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W

Ref. No.	Part No.	Description			Remark
R171	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R172	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R173	1-216-073-00	METAL CHIP	10K	5%	1/10W
R220	1-216-049-00	METAL CHIP	1K	5%	1/10W
R221	1-216-081-00	METAL CHIP	22K	5%	1/10W
R223	1-216-077-00	METAL CHIP	15K	5%	1/10W
R230	1-216-049-00	METAL CHIP	1K	5%	1/10W
R231	1-216-081-00	METAL CHIP	22K	5%	1/10W
R233	1-216-077-00	METAL CHIP	15K	5%	1/10W
R310	1-216-109-00	METAL CHIP	330K	5%	1/10W
R311	1-216-109-00	METAL CHIP	330K	5%	1/10W
R317	1-216-079-00	METAL CHIP	18K	5%	1/10W
R318	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R319	1-216-073-00	METAL CHIP	10K	5%	1/10W
R350	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R351	1-216-073-00	METAL CHIP	10K	5%	1/10W
R353	1-216-049-00	METAL CHIP	1K	5%	1/10W
R355-358					
	1-216-150-00	METAL GLAZE	10	5%	1/8W
R370	1-216-079-00	METAL CHIP	18K	5%	1/10W
R372	1-216-089-00	METAL CHIP	47K	5%	1/10W
R373	1-216-081-00	METAL CHIP	22K	5%	1/10W
R374	1-216-049-00	METAL CHIP	1K	5%	1/10W
R375	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R376	1-216-113-00	METAL CHIP	470K	5%	1/10W
R410	1-216-109-00	METAL CHIP	330K	5%	1/10W
R411	1-216-109-00	METAL CHIP	330K	5%	1/10W
R418	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R419	1-216-073-00	METAL CHIP	10K	5%	1/10W
R500	1-216-073-00	METAL CHIP	10K	5%	1/10W
R504	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R505	1-216-097-00	METAL CHIP	100K	5%	1/10W
R506	1-216-097-00	METAL CHIP	100K	5%	1/10W
R507-509					
	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R510	1-216-089-00	METAL CHIP	47K	5%	1/10W
R513	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R514	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R515-521					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R524-526					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R529	1-216-097-00	METAL CHIP	100K	5%	1/10W (C410)
R530	1-216-097-00	METAL CHIP	100K	5%	1/10W (C412)
R533	1-216-089-00	METAL CHIP	47K	5%	1/10W
R531	1-216-097-00	METAL CHIP	100K	5%	1/10W
R535	1-216-073-00	METAL CHIP	10K	5%	1/10W
R536	1-216-073-00	METAL CHIP	10K	5%	1/10W
R550	1-216-025-00	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R551	1-216-025-00	METAL CHIP	100	5%	1/10W
R552	1-216-073-00	METAL CHIP	10K	5%	1/10W
R553	1-216-017-00	METAL CHIP	47	5%	1/10W
R554	1-216-083-00	METAL CHIP	27K	5%	1/10W
R555	1-216-089-00	METAL CHIP	47K	5%	1/10W
R556	1-216-089-00	METAL CHIP	47K	5%	1/10W
R558-560					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R561	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R562	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R563	1-216-025-00	METAL CHIP	100	5%	1/10W
R564	1-216-025-00	METAL CHIP	100	5%	1/10W
R566	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R567	1-216-073-00	METAL CHIP	10K	5%	1/10W
R577	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R601	1-216-025-00	METAL CHIP	100	5%	1/10W
R610	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R611	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R612	1-216-198-00	METAL CHIP	1K	5%	1/8W
R613	1-216-073-00	METAL CHIP	10K	5%	1/10W
R614	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R625	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
		< VARIABLE RESISTOR >			
RV10	1-238-596-11	RES, ADJ, CARBON 470 (C412)			
RV310	1-238-853-11	RES, ADJ, CERMET 1K			
RV410	1-238-853-11	RES, ADJ, CERMET 1K			
		< SWITCH >			
S510	1-571-478-11	SWITCH, SLIDE (POWER SELECT)			
SW501	1-692-431-21	SWITCH, TACTILE (RESET)			
		< TUNER UNIT >			
TU10	A-3282-003-A	TUNER UNIT (TUX-001A)			
		< VIBRATOR >			
X10	1-567-848-11	VIBRATOR, CRYSTAL (7.2MHz)			
X510	1-567-821-11	VIBRATOR, CRYSTAL (4.19MHz)			

****

MISCELLANEOUS

****

8	1-765-081-11	CORD (WITH CONNECTOR)
130	1-765-460-11	CORD (WITH CONNECTOR)
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)
HP901	1-500-105-11	HEAD, MAGNETIC (PLAYBACK)
M901	X-3368-684-1	MOTOR ASSY, MAIN
M902	X-3368-685-1	MOTOR ASSY, SUB
S901	1-692-885-12	SWITCH, ROTARY SLIDE (TAPE OPERATION)

****

****

HARDWARE LIST

****

#1	7-621-770-67	SCREW +PTT 2.6X6 (S)
#2	7-621-770-XX	SCREW +PTT 2.6X8 (S)
#3	7-624-104-04	STOP RING 2.0, TYPE -E
#4	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3
#5	7-628-253-05	SCREW +PS 2X4
#6	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT
#7	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT
#8	7-621-773-95	SCREW +PTT 2.6X6 (S)
#9	7-621-772-10	SCREW +B 2X4

****

ACCESSORIES & PACKING MATERIALS

****

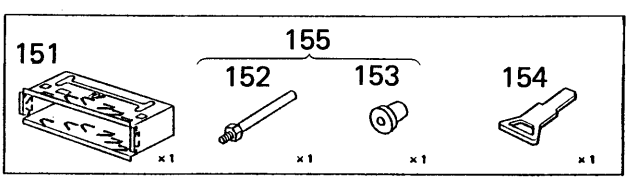
	3-759-197-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, ITALIAN)
	3-759-197-41	MANUAL, INSTRUCTION, INSTALL (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (C410)
	3-759-200-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN)
	3-759-200-41	MANUAL, INSTRUCTION (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (C410)
	X-3367-795-1	CASE ASSY

****

MOUNTING HARDWARE

****

151	3-916-161-01	FRAME, FITTING
152	3-386-828-01	SCREW, FITTING
153	3-349-410-01	BUSHING
154	3-388-078-01	KEY
155	X-3366-405-1	SCREW ASSY (EXP), FITTING



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XR-C410/C412

SONY®
SERVICE MANUAL

AEP Model
UK Model
XR-C410
German Model
XR-C412

SUPPLEMENT-1

File this supplement with the service manual.

Subject: 1. Correction
2. ASSEMBLY OF MECHANISM DECK

(SPM-94009)

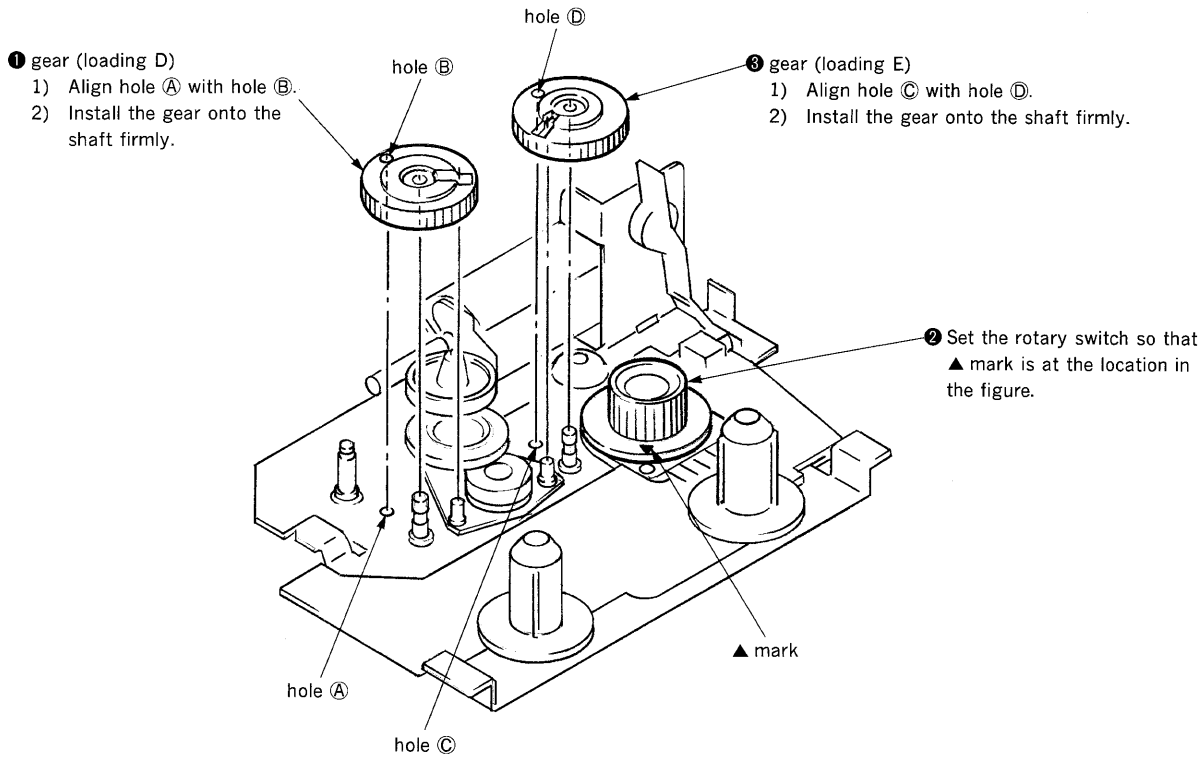
1. CORRECTION

☛ : **indicates corrected portion.**

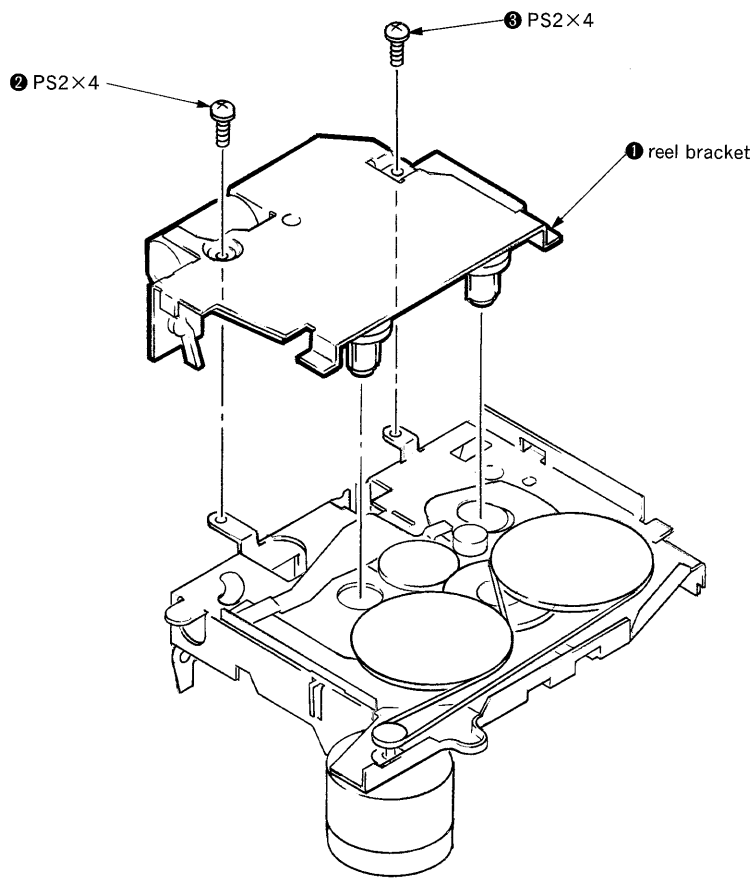
Page	INCORRECT				CORRECT		
	Ref. No.	Part No.	Description	Remark	Part No.	Description	Remark
42	117	X-3368-844-1	CHASSIS (SV) ASSY (A), MECHANICAL		X-3368-841-1 ☛	CHASSIS (SV) ASSY (A), MECHANICAL	

2. ASSEMBLY OF MECHANISM DECK

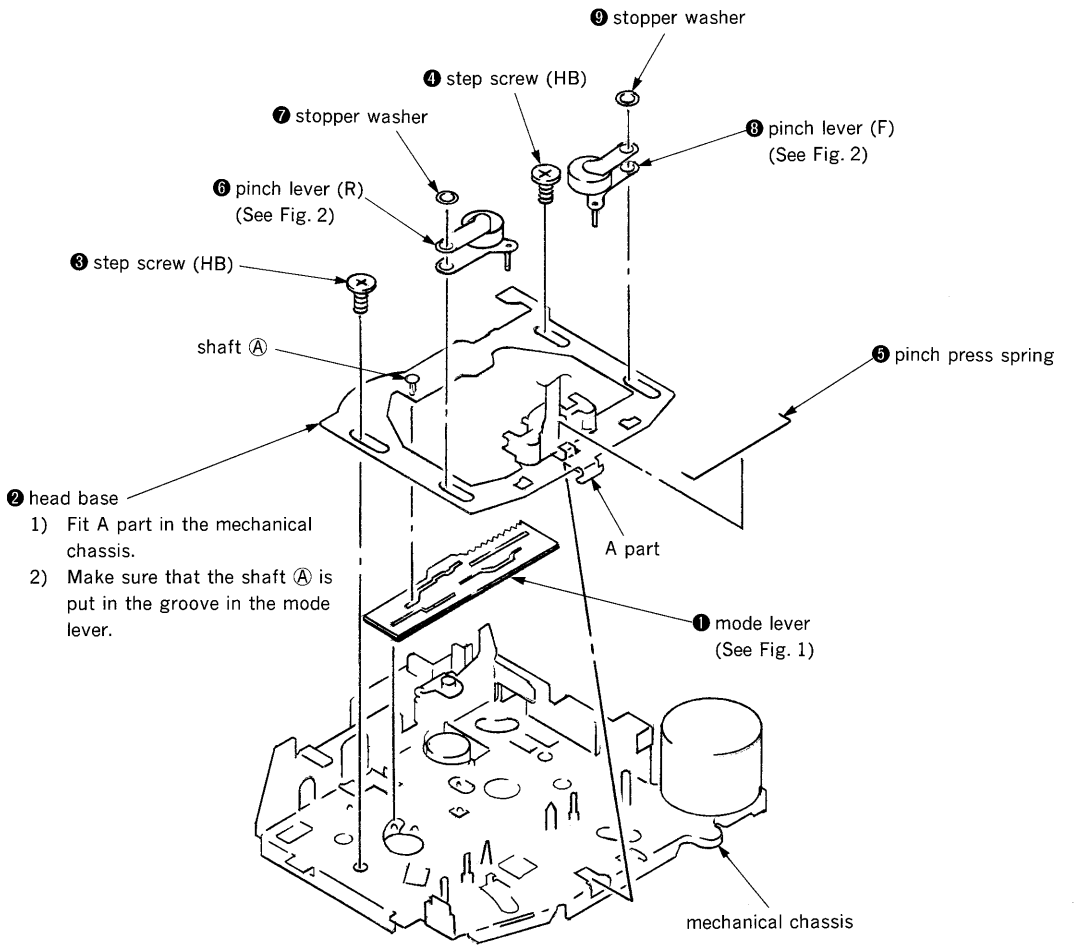
2-1. INSTALLING THE LOADING GEARS


❶ gear (loading D)
1) Align hole Ⓐ with hole Ⓑ.
2) Install the gear onto the shaft firmly.
hole Ⓑ
hole Ⓓ
❸ gear (loading E)
1) Align hole Ⓒ with hole Ⓓ.
2) Install the gear onto the shaft firmly.
❷ Set the rotary switch so that ▲ mark is at the location in the figure.
▲ mark
hole Ⓐ
hole Ⓒ

2-2. INSTALLING THE REEL BRACKET



2-3. INSTALLING THE MODE LEVER AND PINCH LEVERS


❾ stopper washer
❹ step screw (HB)
❼ stopper washer
❽ pinch lever (F)
(See Fig. 2)
❻ pinch lever (R)
(See Fig. 2)
❸ step screw (HB)
shaft Ⓐ
❺ pinch press spring
❷ head base
1) Fit A part in the mechanical chassis.
2) Make sure that the shaft Ⓐ is put in the groove in the mode lever.
A part
❶ mode lever
(See Fig. 1)
mechanical chassis

1) Align • mark on the rotary switch with hole on the mode lever.
2) Make sure that the two shafts and three projections are located as shown below.

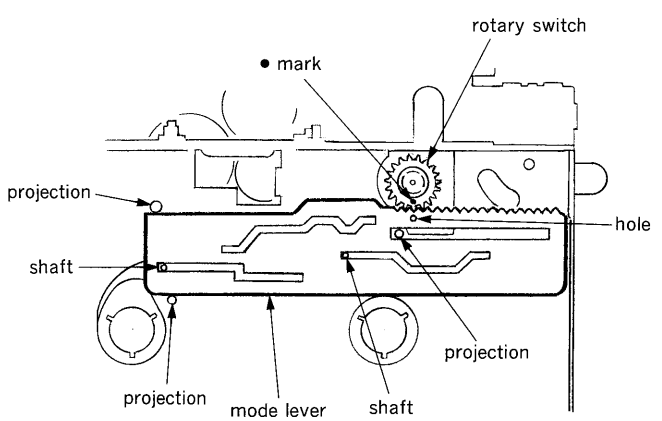


Fig. 1

1) Put the shafts of the pinch levers in the pinch press spring on its head side.

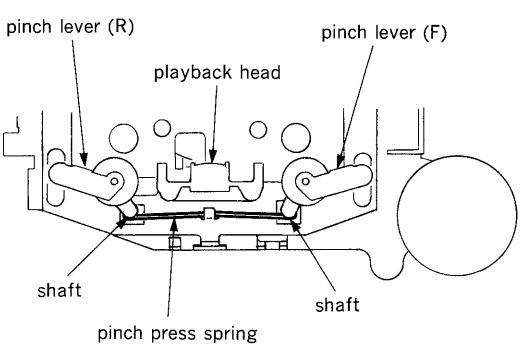
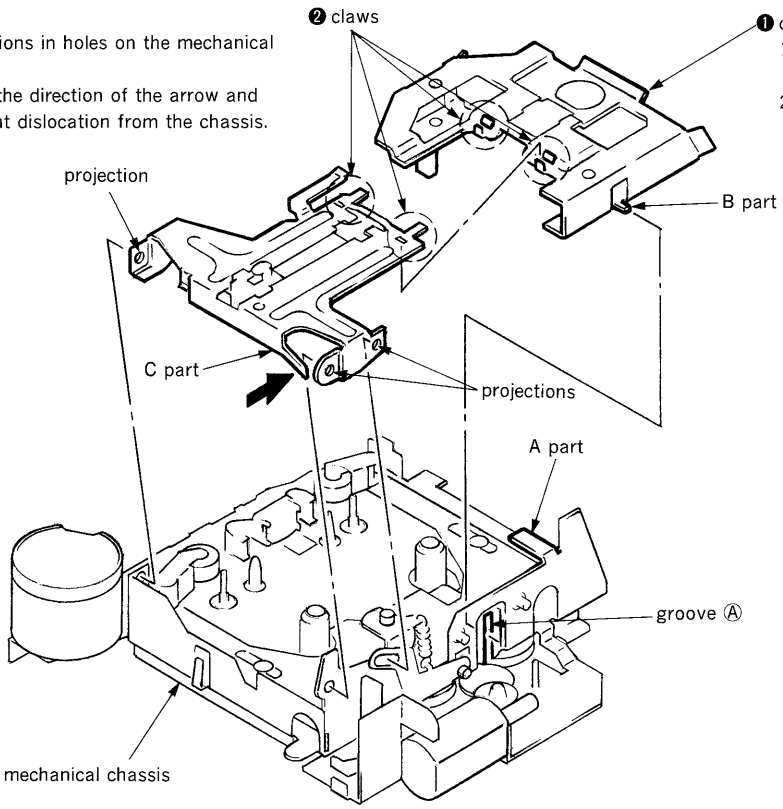


Fig. 2

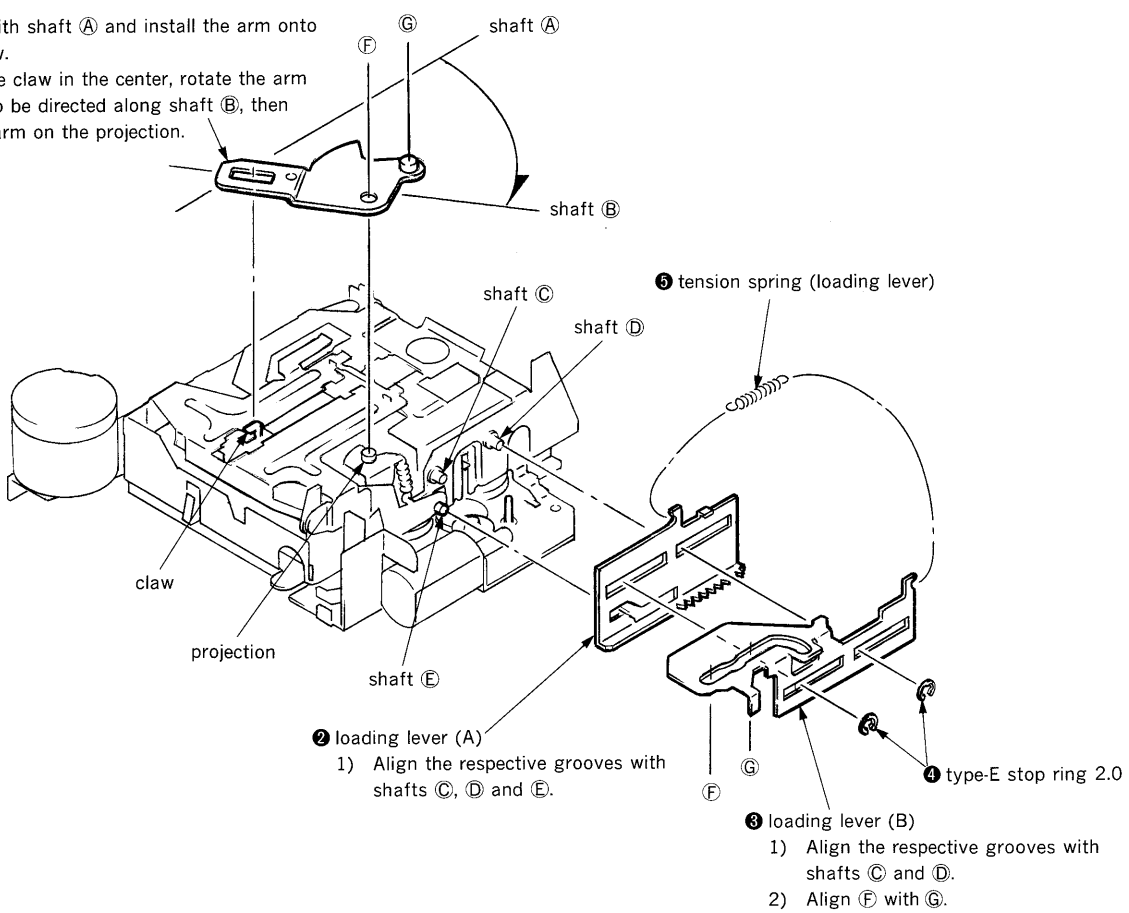
2-4. INSTALLING THE CASSETTE HOUSING

❸ housing hanger
1) Fit three projections in holes on the mechanical chassis.
2) Bend C part in the direction of the arrow and fasten to prevent dislocation from the chassis.

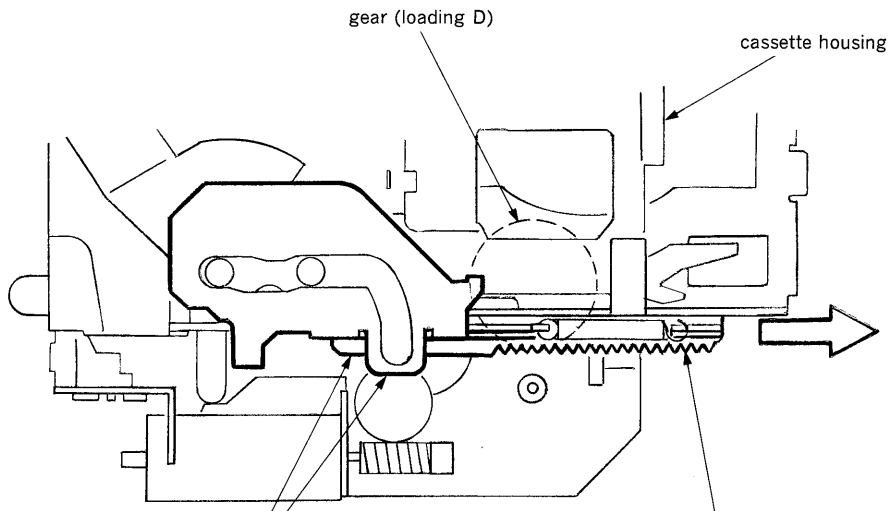


2-5. INSTALLING THE LOADING LEVER

❶ suction arm
1) Align with shaft Ⓐ and install the arm onto the claw.
2) With the claw in the center, rotate the arm so as to be directed along shaft Ⓑ, then fit the arm on the projection.



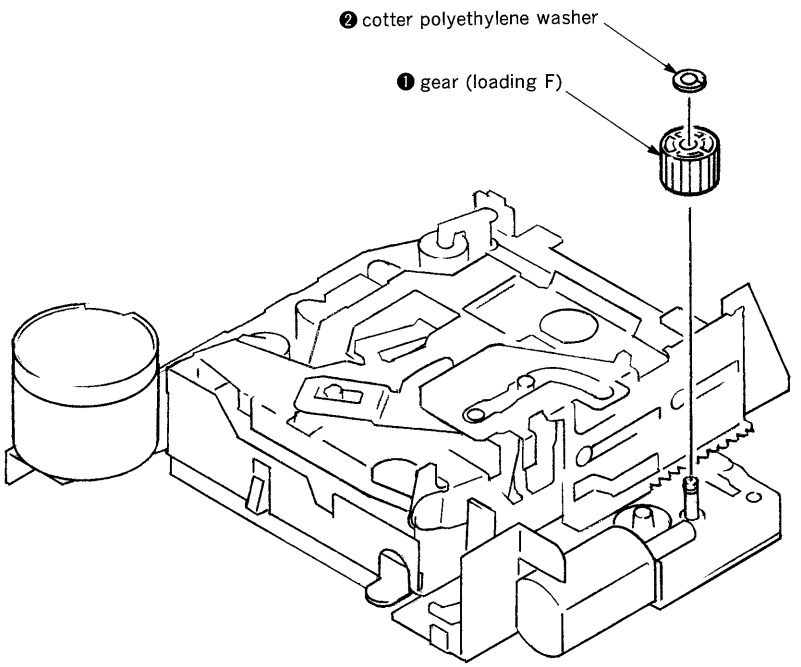
2-6. POSITIONING THE LOADING LEVERS



❷ Loading lever (A) : Allow the teeth of loading lever (A) to engage with those of the gear (loading D).
(Adjustment method : Retract loading lever (A) by 0.2 to 0.5mm in the opposite direction of the arrow.)

❶ Loading levers (A) and (B) : Move loading levers (A) and (B) in the direction of the arrow.
(The cassette housing is put down fully at this time.)

2-7. INSTALLING THE GEAR (LOADING F)



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